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# AUSTRALIAN GEOGRAPHY.

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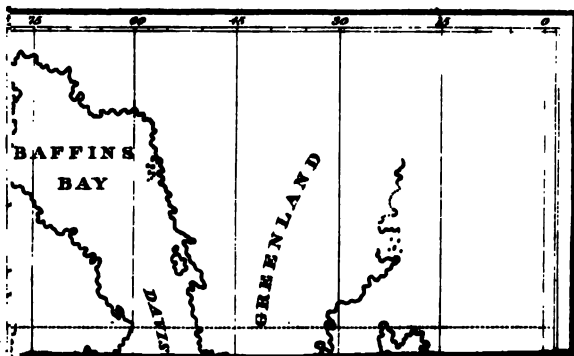
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"Is the tide of civilization to roll only to the foot of the Andes Mountains, and is the sun of knowledge to set at the horizon of the Pacific? No! the mighty day of four thousand years is drawing to its close; the sun of humanity has completed its destined course; but long ere its setting rays are in the west, its ascending beams have glittered on the eastern seas."

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# AUSTRALIAN GEOGRAPHY,

WITH THE

## SHORES OF THE PACIFIC

AND THOSE OF

## THE INDIAN OCEAN.

DESIGNED FOR

THE USE OF SCHOOLS IN NEW SOUTH WALES.

---

AT THE REQUEST OF THE DENOMINATIONAL BOARD OF EDUCATION.

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BY

LIEUT-COLONEL SIR T. L. MITCHELL,

SURVEYOR GENERAL.

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## P R E F A C E .

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FOR the author's guidance in this little work various elementary books of Geography were sent to him, and he had commenced the arrangement by question and answer, before he had an opportunity of reading some able works on education, in which it is objected to.

He is not now convinced, however objectionable ~~set~~ questions and answers may be for the purpose of teaching other branches of education, that Geography may not admit of this plan without objection.

One word (a name) represents a place, and the primary geographical circumstances are shewn by the lines of a map. A question relative to any place connects it with an idea, and requires the exercise of thoughts, having reference (in this work) to relative position, productions, trade, or whatever else has been found of most interest in larger geographical works.

Teachers will adopt their own methods of instruction no doubt, but it is hoped that the Index will be found a convenient guide to the matter in the body of the work. Thus, for example—if *Guayaquil* were given to the student as an exercise, on turning to pages 42 and 44, he finds that it is situated on the South American coast, and he is obliged to read some interesting facts about the ocean-currents, &c. ; at page 46, the duration of voyages from Guayaquil to various places ; at page 47, how much faster steamers now make these voyages ; at page 72, that insects are so extremely numerous there that it is impossible to keep candles burning, except in a lantern ; that there is a species of centipede a yard in length, whose bite is mortal, &c. ; at page 74, that the rainy season is between January and June at Guayaquil—the inundations so great that the inhabitants retire, with their herds, up the sides of the Andes—and that fevers, diarrhoea, dysenteries, vomiting, and spasms, then prevail.

and that the mortality is great ; that from April to December the heats are terrible and destructive, and the black vomit prevails ; at page 76, that the river of Guayaquil is one of two which form the means of communication between the province of Quito and the Pacific Ocean ; and, at page 93, that Guayaquil, in conjunction with Maracaybo and the Carraccas, supplies Mexico with the whole it consumes of cacao, amounting annually to 3,300,000 lbs.

Thus the name of any place may be invested with facts and circumstances sufficient to fix it in the memory ; especially when, by means of a map, the locality is made the primary idea.

In sifting the matter in any page, for information respecting a given place, knowledge respecting other places must be also gathered ; and more readily when in this form, being in small separate parcels, to be easily taken up.

The intelligent teacher will perceive that the matter is thus available for combinations, to any desirable extent to which he may think fit to direct the student's exercises.

The general plan of the work has been suggested by the position of Australia, the oceans surrounding this great island, and the shores bounding these oceans. The countries along the various coasts are examined in regular succession from east to west, beginning with those of South America. Mercator's Chart, shewing Great Britain at each extremity, and Australia near the centre, is very convenient for this order of study. From this centre, or new point of view, the opposite coasts possess a new interest ; while the serial arrangements, derived from the apparent course of the sun, connect all ideas of locality with our true position on the planet.

The harbour of Port Jackson, in the centre of lines of communication radiating by sea on so many countries, seems unmatched elsewhere in position, as a seat of commerce and of naval power.

The natural divisions of land and water—the established dependence of one part of the world upon another, for their mutual intercourse, for their necessary supplies, or their luxurious gratifications—and viewed with reference to the insular situation of Australia—are what the author has attempted briefly to sketch in this book.

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PERSPECTIVE PROJECTION OF THE SOUTHERN HEMISPHERE ON THE  
PLANE OF THE HORIZON OF LONDON.

[T. Clayton Scd.]

\* \* \* By comparing this with Mercator's Projection, by means of the Tropical and Antarctic Circles, (which are those dotted,) the places shewn on the chart of Mercator may be referred to their true position on the spherical surface.

# AUSTRALIAN GEOGRAPHY,

DESIGNED FOR

## THE USE OF SCHOOLS

IN NEW SOUTH WALES.

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### GENERAL DEFINITIONS AND INTRODUCTION.

**THE** Earth is a globe or sphere, of about 8,000 miles in diameter.

It is called the *terraqueous globe*; this name being compounded of two Latin words meaning land and water.

The Earth moves on its axis from West to East, and performs the revolution in twenty-four hours, thus causing day and night.

Those parts in the axis of rotation are called the Poles. The line belting the Earth, at an equal distance from the two Poles, is called the Equator or Line.

The Equatorial Line divides the globe into hemispheres or halves.

The Sea forms about three-fourths of the present surface of the globe; the remaining fourth consists of Land.

The portions of land form the Continents and Islands.

The greatest portion of dry land is in the Northern Hemisphere.

Australia is in the Southern Hemisphere.

A Continent is a very large portion of land.

An Island is a tract of land surrounded by water.

A Peninsula is a portion of land, hemmed in on all sides but one, by water.

The neck of land by which a Peninsula is joined to a Continent is called an Isthmus.

A point of land stretching into the sea is called a Cape, Promontory, or Head.

When the land rises to a great height, the elevated mass is called a mountain; and when such high land runs continuously through a country, it is called a Range of Mountains. The height of mountains is calculated from the level of the sea.

A Volcano is a burning mountain, which from time to time, throws up flames, and burning melted matter called *Lava*.

The name of "Table Land" is given to some flat countries when elevated to a considerable height above other adjacent land or the sea.

A Shore or Coast is land bordering on the sea.

A Strait is a narrow passage of water connecting two seas.

A Channel is a wider passage than a strait.

A Gulph is a large arm of the sea stretching into the land, and nearly surrounded by it.

A Bay is a large arm of the sea stretching into the land, but less encompassed by it than a gulph is.

A Creek is a small arm of the sea stretching into the land.

A Harbour or Haven is a small portion of the sea, so surrounded by land as to afford shelter for ships.

A Road or Roadstead is a part of the sea not so well sheltered as a harbour, but affording protection to vessels against certain winds.

The land of the Globe comprises four great divisions called, but not very correctly, quarters; for they are very unequal in size, and Australia is now generally considered from its magnitude, a fifth great division.

The sea is divided by the land into three parts, called respectively the Pacific, the Indian, and the Atlantic Oceans.

Australia separates the Pacific from the Indian Ocean; Africa is between the Indian and the Atlantic Ocean; and North and South America divide the Atlantic from the North and South Pacific Oceans: which *last is the greatest body of water, being more extensive than the entire surface of the dry land.*

The greatest body of land comprises the two other great divisions, namely Europe and Asia, which are separated partly by the Rivers Don and Volga, and partly by the Oural Mountains.

There are also *five* Oceans, or great divisions of the Water ; for, besides the Pacific, the Indian, and the Atlantic, the seas surrounding the two Poles, are called respectively, the Arctic and the Antartic Oceans.

The extreme cold and ice produced by it in the Polar seas ; the intense heat of the equatorial regions and the more temperate climates between these extremes, give the character of the Zones, to *five* different portions of the Globe surrounding it, in belts parallel to the equator. The North and South Frigid Zones include the Polar regions ; the Torrid Zone is that of the Equator, and the North and South Temperate Zones are two belts between the Torrid Zone and the two Frigid Zones.

The cold and the obstruction of ice impede direct navigation near the Poles. The great heat of the equator and rarefaction of the air, modifies the direction of the winds there, produces trade winds ; and, southward of the capes of land jutting into the Southern Ocean, there is a continuation of strong winds, chiefly in an easterly direction. Hence it is that vessels not only proceed eastward round the Cape of Good Hope, which is the shortest way in sailing from England to Australia, but have to continue eastward, and return by Cape Horn, the longest way, in sailing from Australia to England.

In the equatorial seas, the winds caused by the rarefaction of the air, blow continually from S.E. or N.E., and are called Trade Winds, because they are favorable for vessels both when outward and homeward bound—the course through the Atlantic, being across these Trade winds, which also prevail in the Pacific—but which are periodical in the Indian Ocean, because modified by the situation of the land.

These periodical winds are called Monsoons, and blow each half of the year in contrary directions.

The two *Continents* of America and Africa extend into the *Southern Hemisphere*, in the form of great Promon-

teries; and although Australia occupies a similar position, and is of equal importance in separating two Oceans, it comes under the head of Islands, because it is entirely surrounded by the sea.

The Isthmus of Suez joins Africa to Asia; the Isthmus of Darien connects North and South America. It has long been contemplated to cut through these and thus make South America and Africa great islands, similar to Australia; but while it continues to be impossible for vessels to pass from one ocean to another at either of these points, the position of Australia is more advantageous for the purposes of commerce and circumnavigation, than that of either of the Promontories of Africa or America.

The Ocean Currents perform a most important part in the economy of nature, and a knowledge of them is of the utmost consequence to navigation. No part of the Ocean is in a state of rest: its whole surface is perpetually agitated; one of the wise provisions of the great Author of the Universe for preserving its purity. Not only do these currents prevent stagnation in the sea, but by dispensing heat and moisture they temper the climates over a vast portion of the globe.

Botanical Geography, or the distribution of plants, is better understood by comparing those of different countries.

In Terra Australis the aggregate number of plants known to Mr. Brown is 4100—of these 166 are common to this country and to Europe—the proportion of European plants is still less in the South of Africa. The vegetation of the Cape of Good Hope differs almost as, but not quite so, widely from that of the Northern parts of Africa, and the South of Europe, as does that of the corresponding latitude of Terra Australis from the Flora of India, and of Northern Asia. The proportion of these European species in South America is believed to be still smaller than in South Africa.

In some respects the distribution of animals resembles that of plants; the limits of both are, in so far, circumscribed by the intervention of seas and continuous chains of mountains, yet both are chiefly influenced by the in-



equalities of temperature. Animal life is most intimately connected with, and dependent upon, the vegetable kingdom; heat and moisture stimulate the growth of plants, therefore the greater the amount of these atmospheric phenomena, so much more luxuriant is vegetation, and so much more abundant are animal formations. Hence we find, as a general rule, that vegetation is most exuberant, and animals most prolific, in the countries under the tropics, where heat is greatest, and moisture most abundant.

The difference between a coast and a continental climate is also exemplified in the decrease of vegetable and animal life in proportion as we recede from the coasts, and approach the interior of continents. In the arid plains of our interior, vegetation loses its luxuriance, and, consequently, its power to maintain the numerous tribes of animals which depend for subsistence on the leaves and plants peculiar to a humid soil.

The relation of geographical sites of continents to particular groups of animals, is not only remarkable in animals now existing, but has been traced in the races of animals now extinct—or *fossil*. Professor Owen has found not only that particular forms were assigned to particular provinces, but that the same forms were restricted to the same provinces, at a former geological period, as they are at the present day—and in this respect the law of geographical distribution of extinct Mammalia has been established by the evidence of Australian fossil bones, as satisfactorily in regard to Australia, as it seems now capable of being determined in regard to the larger continents of the globe.

The distribution and civilization of the different tribes and races are determined essentially by the configuration of continents, and by the direction of mountain chains, especially by those whose direction is nearly from East to West. These great physical configurations have determined the contents of many pages of history. Great seas, and a system of currents arising in their interchange of waters, appear to have been the chief agents in the distribution of the human race, as they are now likely to afford the chief means of a more extended commerce and a more perfect civilization.

Australia is characterized by a great deficiency of animals of the carnivorous order, and by inhabitants less artificial than any other class of savages. The great problem of her destiny when taken up by the dominant races, and connected, by commercial enterprise, with the distant shores of the Indian and Pacific Oceans, seems to require for its solution, an extensive knowledge of geography, since the articles of commerce consist of almost all the productions of the animal, vegetable and mineral kingdoms.

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## CHAPTER I.

### OF SEAS AND RIVERS.

#### QUESTIONS.

Where are the sources of the largest rivers ?

At the highest parts of the land.

Is the Continental part of the land also intersected by various inland seas ?

Yes.

What are the principal seas extending into the land ?

The Mediterranean, between Europe and Africa, and its upper portions, viz :—the Black Sea, and Sea of Azof ; the Red Sea, between Africa and Arabia ; the Baltic, in the Northern part of Europe ; and the Yellow Sea, extending into China. There are also other seas, but as they are rather separated by Islands from the rest of the Ocean than surrounded on all sides but one by land, they cannot be called Inland Seas.

Are any Seas wholly surrounded by land ?

Yes : the Caspian Sea, the Dead Sea, the Sea of Aral and many lakes.

Are all such Seas and Lakes having no outlet, salt ?

Yes.

What is a River ?

A large stream of water formed by many smaller *water courses*, united into one channel generally found *at distances proportioned to the heights which enclose the basin, or surface receiving the rain.*

Are there any parts of the earth where rain never falls?

Yes.

Describe them.

The most extensive is that district which stretches from Morocco Eastward through the desert of Africa; parts of Arabia, Persia, and the desert province of Meckran in central Asia.

Do Rivers arise there?

No, they are called Riverless districts.

What is the largest river basin known?

The Maranon or Amazon in South America.

What is its extent?

One million, five hundred and twelve thousand square miles.

Is that river large in proportion to the extent of its basin?

Yes.

Do all rivers bear a similar proportion to the extent of surface supplying them?

Not all.

How are the rivers of Europe and Asia classed?

As Oceanic and Continental.

To what seas do these rivers flow?

The rivers of Europe empty themselves chiefly into the Atlantic Ocean and its branches; those of Southern Asia flow exclusively into the Indian Ocean; those of Eastern Asia into the Pacific Ocean; and those of Northern Asia, into the Arctic Sea, to which also Northern Europe contributes its waters.

What are continental rivers?

In nearly the whole of Inner Asia, and part of Eastern Europe, a tract extending from near the Gulf of Finland on the West, to near the Yellow Sea on the East, the rivers do not run into the Sea, but into lakes, or are lost in the sands of their own channels.

Which is the greatest of these lakes, indeed the largest lake in the world?

The Caspian Sea.

What is the largest River flowing into it?

The Volga, which is the principal river of Europe.

Are there any similar Continental Rivers in America?

Yes, there is the Rio Grande, on the Table Land of Mexico, and in the Continental Basin of the Andes in South America, the Rio Desaguadero, after a course of 300 miles is lost in Lakes and Swamps.

In what direction do most of the Oceanic Rivers flow?

By far the greater number of important Rivers on the globe reach the Ocean in an Easterly direction, those to the South and North are next in importance, while those running a Westerly course are few in number and insignificant in extent.

## CHAPTER II.

### OF AUSTRALASIA.

What are the names of the largest Islands of the world after Australia?

Borneo, New Guinea (or Papua), and Sumatra; all to the Northward of Australia, where the sea has been said to resemble a *broken Isthmus*; and Madagascar near the East Coast of Africa.

What name has been given to the whole of that group of Islands to the South East of the Continent of Asia, of which Australia is the chief?

Australasia.

What name has been given to the remaining Islands of that Ocean?

Polynesia.

What is the name of the North Eastern Cape of Australia.

Cape York.

What is the name of the Strait near it?

Endeavour Strait.

What land forms the opposite side of Torres Strait?

New Guinea.

What Port has been recently found near Cape York?

Port Albany.

Describe it.

Port Albany is situated on Albany Island, which is about three miles long and one mile from the mainland. The Strait between affords good anchorage, and ready access to or from Torres Straits or Sydney.

What Island is situated immediately to the Northward of Endeavour Strait?

Prince of Wales Island.

Who gave the name to Endeavour Strait?

Captain Cook.

What renders the navigation of Torres Straits dangerous?

Coral Reefs.

How far do these extend along the Coast Southward?

To nearly opposite Port Bowen.

What is the name of the Sound to the Northward of Port Bowen?

Broad Sound.

What name has been given to the interior country behind Broad Sound?

Capricornia.

What are the principal rivers of that region?

The Burdekin, the Isaacs, the Mackenzie, the Salvator, the Claude, the Belyando, and the Nogóa; all flowing towards the Eastern Coast; the Nive, Nivelle, and Victoria, falling towards the interior.

What are the highest mountains?

Buckland's Table Land.

What is the finest part of the Coast northward of Sydney?

That between the Latitudes of 22' and 20' S., according to Mr. Jukes.

What are the advantages?

Great rise and fall of tide, abundance of Pine Trees; a perpetual sea breeze from the S. E. trade-wind, and many lofty, rocky, and picturesque islands.

What is the chief advantage in the structure of the interior country?

The approach to it from the Eastern Coast is not there impeded by the great obstruction of the Coast Range, which in other parts separates the open plains of the interior from the sea-coast.

Name the valley where the access to the interior is open and extensive.

The valley of the Nogóá, watered by the rivers already mentioned, and lower down by the Mackenzie.

How far to the westward is the country open and accessible ?

As far as has yet been explored, even to the desert regions of Captain Sturt.

Which are the principal Rivers of Australia ?

The River Hume (or Murray) is the greatest body of running water.

What is the length of its course ?

Four hundred and twenty miles to its junction with the Darling.

What is the length of the River Darling from that junction upwards ?

About 800 miles to its highest Northern sources near Buckland's Table Land.

Which are the highest Mountains in Australia ?

Those called the Southern Alps at the head of the river Murray.

What is the native name of the river Darling ?

The Bärwan.

What rivers fall into it ?

The principal affluents are the Marandá, the Balonne, the Mooni, the Gwydir, the Nammoý, the Castlereagh, the Macquarie, and the Bogan.

What rivers fall into the river Murray ?

The Darling, the Lachlan and Murrumbidgee united from the North ; and the Mita Mita, King, Ovens, Goulburn, Yarrayne and Loddon from the South.

What is the name of the territory southward of the Murrumbidgee ?

Australia Felix.

What rivers of Australia Felix fall into Bass' Straits ?

The Glenelg, the Surry, the Fitz Roy, the Shaw, the Hopkins and the Yarra Yarra.

What is the principal Town ?

Melbourne.

What are the chief Ports ?

Portland Bay, Port Fairy, Port Phillip, and Western Port.

What are the chief Capes or Headlands?

Cape Northumberland, Cape Bridgewater, Cape Otway, and Wilson's Promontory.

What is the name of that portion of Australia Felix to the Eastward of the Snowy Mountains?

It was called by Mr. M'Millan the discoverer, Caledonia Australis, but is known now as Gipps' Land.

What are its chief rivers?

The Tanbo, Dunlop, Nicholson, Mitchell, Avon, M'Alister, Thompson, Tarngill, Albert, Franklin, and Tara.

### CHAPTER III.

#### OF VAN DIEMAN'S LAND.

What forms the southern shore of Bass' Straits?

The Island of Van Dieman's Land.

What is its extent?

About 200 miles of average length from North to South, and about 150 of average breadth from East to West.

What rivers flow from it into Bass' Straits?

The Tamar, the Forth and the Leven.

Name the other rivers of Van Dieman's Land.

The Arthur, the Severn, and the Derwent.

What is the chief town?

Hobart Town, on the river Derwent.

What town is situated on the Tamar?

Launceston.

Name the harbours of Van Dieman's Land.

Port Dalrymple and Circular Head, in Bass' Straits; West Port, Macquarie Harbour, and Port Davey, on the Western Coast; and Hobart Town, Port Arthur, and Great Swan Port, on the Eastern Coast.

Name the principal capes of Van Dieman's Land.

Cape Grim to the North West; South West Cape, and South Cape, both on the South; Cape Lodi on the East Coast; and Cape Portland on Banks' Strait.

Has Van Dieman's Land been thoroughly taken up as a grazing country?

No.

How is that ascertained?

By the recent discovery of upwards of two million acres of good grazing land in the interior, an extent equal to two Australian counties.

Is the island more extensive than New South Wales?

No, it is less in extent than New South Wales proper, excluding Australia Felix.

## CHAPTER IV.

### OF AUSTRALIA.

What is the principal Mountain Range of Australia?  
The Eastern Coast Range.

What is the character of the rivers on the eastern side?

They are better sustained, and more rapid in their courses, than those rising on the western or interior side.

What is the obvious cause of that difference?

The distance between the range where they rise, and the sea where they terminate, which is much shorter.

State the number of Counties into which the present colony of New South Wales has been divided?

Ninety.

How many of these are in Australia Felix?

Twenty-three.

What is meant by the "Nineteen Counties"?

Those counties which have been proclaimed by Letters Patent.

Name the three principal Rivers falling to the Eastern Coast within the nineteen Counties.

These are the Shoalhaven, the Hawkesbury, and the Hunter.

Name the principal tributary to the Hawkesbury.

The Wollondilly, known by that name at Goulburn, called also Warragamba, between the junction of the river Cox from the West, and that of the Nepean river from the East.

Name the more direct tributary to the Hawkesbury.



The Colo, from the West.

What is the lower branch?

The Macdonald, from the North West.

What is the chief southern tributary to the Hunter?

The Wollombi.

Which is the most northern tributary?

The River Page.

Which is the most western source?

The Goulburn.

Name the two lowest tributaries from the north?

The Paterson and the Williams.

What is the chief town on the river Shoalhaven?

Braidwood.

What is the town on the Wollondilly?

Goulburn, in the County of Argyle.

What towns have been laid out on the lower part of the Hawkesbury?

Penrith, Castlereagh, Richmond, Windsor, and Pitt Town, all in the County of Cumberland; and Emu and Wilberforce in the County of Cook.

What are the names of the towns on the river Hunter?

Newcastle or Port Hunter, at the estuary, and Maitland at the head of the navigation.

What other towns are on the northern tributary to the Hunter?

Muscle Brook, on the northern branch of the Hunter; Murrurundi, on the Page; Dulwich, on Glendon Brook; Paterson, on the navigable branch of that name; and Clarence Town, at the head of the navigation of the William.

What is the next port to Newcastle on the North?

Port Stephens.

What is the chief settlement of the Australian Agricultural Company there?

Tahlee.

In what County is Sydney situated?

Cumberland.

Name the other towns of Cumberland, besides those on the Hawkesbury already mentioned.

Appin, Campbell Town, Liverpool and Paramatta.

What are the principal inlets of the Sea to the southward of Port Jackson?

Botany Bay and Lake Illawarra.

What rivers fall into Botany Bay?

Cook's River and George's River.

What town is situated on the bank of George's River  
Liverpool.

Is the water salt or fresh in George's River at Liverpool?

It is fresh above the dam, salt below the dam.

What County is next to Cumberland on the South  
The County of Camden.

What is the County town of Camden?

Berrima.

What are the other towns?

Wollongong, and Kiama, both on the Sea Coast in  
the Illawarra District; and Picton and Camden, near the  
river Nepean.

Describe the Illawarra.

It is a tract of rich land hemmed in between the Illawarra Range and the Sea Coast, originally covered with luxuriant palms, and other trees differing very much from those forming the open forests of the interior country.

What settlements have been made on the eastern Coast to the southward of the Shoalhaven river?

There is the township of South Huskisson on Jervis Bay, on the coast of the County of St. Vincent.

What is the area of these nineteen counties?

Thirty eight thousand, five hundred and eighty-six square miles.

What other inlets are there further south?

The principal of those are Ulladulla, and Bateman Bay at the mouth of the river Clyde.

Name the river falling into the Sea, south of the Clyde.

The Moruya.

Of what is it the southern boundary?

The County of St. Vincent.

What townships have been established along the Coasts further southward?

Boyd Town, at Twofold Bay, and Alberton the port of Caledonia Australis, or Gipps Land.

What settlements have been made to the Northward of the nineteen counties?

Port Macquarie, the M'Leay, the Clarence, Moreton Bay, and Wide Bay.

What settlement is on the Northern Coast?

Port Essington.

Name the town there?

Victoria.

What settlement is on the Western Coast?

The colony of Swan River.

What is the principal town?

Perth.

On what river is it situated?

On Swan River.

What other towns have been laid out?

Fremantle, Kelmscott, Augusta, Peel, &c.

What is the name of the town at the head of King George's Sound?

Albany.

Name the counties into which that colony has been divided.

Melbourne, Glenelg, Grey, Carnarvon, Twiss, Victoria, Durham, Lansdowne, Perth, York, Howick, Beaufort, Murray, Grantham, Minto, Wellington, Wicklow, Peel, Sussex, Nelson, Goderich, Hay, Lanark, Stirling, Plantagenet, and Kent.

What are the most favourable ports on the coast for steamers?

During the summer months from 1st October to 1st April, steamers might touch at Fremantle; and during the winter months, at Port Gladstone, fifteen miles to the southward, affording a sheltered harbour where ships may ride securely within one hundred yards of the shore.

Has coal been discovered at Swan River?

Vast beds of that mineral have been discovered in that colony; also iron and copper.

What other product is likely to become valuable there?

Ship timber of excellent quality.

What settlement has been made on the Southern Coast, between New South Wales and King George's Sound?

The colony of South Australia.

What is the name of the Capital?

Adelaide.

What article of commerce have the colonists already produced?

Copper ore and other minerals of very superior quality.

What is the character of the climate?

It is said to be more moist than New South Wales, and consequently the progress of cultivation has been more general.

What rivers form good lines of communication for driving cattle and sheep from New South Wales to Adelaide?

The rivers Murray and Darling.

In what part of Australia has British colonization been most firmly established?

In that part termed the Middle District, comprising Sydney, and the first surveyed counties, towns and villages.

*the Nineteen Counties of New South Wales, (with the Australian Agricultural Company's grant,) being those first proclaimed.*

Counties.	Provincial and other Towns.	Mountains.	Rivers.	Contents in square miles.
IRELAND.	Sydney (City) Paramatta Windsor Richmond Liverpool Campbelltown Castlereagh Appin St. Leonards Pitt Town Penrith Longbottom		Hawkesbury Nepean George's Paramatta South Creek	1445
N.	Berrima Kiama Wollongong Wilton Pictou Camden Murrumbidgee	Kenbla Keera Mittagong Jellero Pianeng Nundialla Corrimal Razorback or Mt. Hymettus	Shoalhaven Wingecarabie Wollondilly Nattai Warragamba Nepean Bargo Kangaroo Cataract Paddy's River	2188
INCENT.	Braidwood Broulee Kioloa Ulladulla Huskisson.	Budawang Currocbilly Cooyoyo Diddee (or Pig geonhouse Jillimatong Noura	Shoalhaven Deua Moruya Clyde Endrick Mongarlow	2667
UMBERLAND.	Newcastle East and West Maitland Greta, Wolombi Gosford Singleton	Meruben Calore Yango Werong Finch Collabeen or Corraban Sugarloaf, &c.	Hunter Wolombi Macdonald Hawkesbury	2342
AM.	Paterson Seaham Clarence Town Dungog Leamington Merton Muswellbrook Aberdeen	Mt. Royal Hudson's Peak Carrow Cabre-bald Pyraman William Allyn	Hunter Paterson Williams Allyn	2117

Counties.	Provincial and other Towns.	Mountains.	Rivers.	Contents
6. HUNTER.	Jerry's Plains St. Albans	Monundilla Nullo Coricudgy	Hunter Goulburn Wolombi Capertce, Colo Macdonald	20
7. COOK.	Hartley Emu Bowenfels Rydal E.	The Blue Mts. Clarence Hay York Walker King George's Mount Mt. Tomah Honeysuckle Hill	Nepean Warragamba Cox's Capertce, Colo	21
8. WESTMORELAND.	O'Connell Plains	Murrain Collong Stromlo Blaxland Square Rock The Peaks	Campbell's Fish Cox's Wollondilly Kowmung	11
9. ARGYLE.	Goulburn Marulan Bungonia	Marulan Towrang Mt. Macallister Mt. Hobbes Mt. Milton Wayo Allanoyony- ga	Shoalhaven Wollondilly Boro Cockbundoon	11
10. MURRAY.	Yass, S. Queanbeyan Bungendore Larbert	The Gourrock Range Bywong Talyrang Peak Cowangerong Wollowolar Ellendon Yarrow Pic Tinderry Mts. or the Twins	Shoalhaven Quenbeyan Yass Murrumbid- gee Boro Creek Molongolo	2
11. KING.	Gunning Yass, N.	Bowning Hill Mundonen Dixon's Chaton, Cullarin Darling	Boorowa Narrawa or Lachlan Crookwell Yass	1

ea.	Provincial and other Towns.	Mountains.	Rivers.	Contents in Square miles.
1A.	Buckburridge Cook's Vale	Lawson	Crookwell Lachlan Abercrombie Campbell Isabella	1924
r.	Bathurst Blaney Carcoar	Evernden Three Brothers Lachlan The Canobolas	Macquarie Belubula Lachlan	1860
B.	Kelso Rylstone Rydal, W.	Durambang Mt. Ovens Blackman's Crown Honeysuckle Hill Marsden or Clandulla Tayan Pic	Macquarie, Fish River Cudgong Turon	1519
	Cooyal	Rumker's Pic Brace or Tongongwell Cox's Crown Willworrl Nullo Mts. Pomany	Cudgong Goulburn	1618
L.	Seone Murrurundi Merriwa Ailsa	The Liverpool Range Temi - Tingroo Towarri-Terell Murulla Warandie	Hunter Page Isis Dart Brook Goulburn Krui	2344
	Casilis	Macarthur (a. Moan) Diehard Wingeworra	Mummurra, Krui Goulburn Cudgong Macquarie Erskine or Talbragar Coolaburragundy	1683
TOW.	Wellington Mudgee Orange	Canobolas Guannahill Bocoble Galwadyer	Cudgong Macquarie Bell, Turon Pyramul Meroo	1656

Counties.	Provincial and other Towns.	Mountains.	Rivers.	Contents in Square miles.
19. GLOUCESTER.	Raymond Terrace Stroud		Williams Karuah Macleans Manning Gloucester Barrington Myall Chichester	2930
20. MACQUARIE.	Port Macquarie. Wingham Kempsey Marraville	Kippara Sea View Cockamerico Brokenbago Cago Tinebang Culapatamba Idalkangara Arakoon	Manning Hastings Wilson M'Leay Lansdowne Maria's River	2000

What is the next most extensively colonized territory?  
Australia Felix, or the Port Phillip District.

TABLE OF SOUTHERN COUNTIES.

Counties.	Provincial and other Towns.	Mountains.	Rivers.	Contents in Square miles.
1. FOLLET.			Glenelg	1040
2. NORMANBY.	Portland The Grange	Napier Eeles Eckersley Kincaid Richmond Hill	Glenelg Wannon Grange Burn Stokes Crawford Eumaralla Fitz Roy Surrey	1920
3. DUNDAS.	The Grange	Dundas Group Bainbrigge Abrupt Sturgeon The Grampians	Glenelg Wannon Grange Burn Korite Rivulet	2000



No.	Provincial and other Towns.	Mountains.	Rivers.	Contents in Square miles.
	Belfast Warnambool	Rouse The Gram- pians Sturgeon	Hopkins Merri Fumaralla Moyn Shaw	1660
		The Gram- pians The Pyrenees Mt. Sturgeon Mt. Abrupt Mt. Cole Dahcorump- beet Misery	Hopkins	1825
		Shadwell Clerke Noorat Warnambool	Hopkins	1420
			Hopkins	1160
		St. George Meuron LangdalePike	Barwon	1276
R.		Gellibrand Hesse	Yarrowee Woody Yalock Barwon	1470
		Buninyon	Yarrowee Werribee Loddon Colliban	1194
L.	Mitchell Town Seymour	Macedon	Goulburn Campaspie Colliban	1145
	Melbourne Williams Town Warringal St. Kilda Bulla Bulla	Macedon Wilson Blackwood Holden	Werribee Macedon Saltwater Plenty Yarra Yarra	1520

Counties.	Provincial and other Towns.	Mountains.	Rivers.	Contents in Square
13. GRANT.	Geelong	Station Peak or Anyaghe Yowaug Collite	Barwon Moorabool Werribee Yarrowee Little	16
14. ANGLESEY.	Seymour	Trawoul Torbreck Mowende Torbreck	Goulburn Devil's	17
15. EVELYN.		Peak Hill Mowende Tingalaragin Riddell Steel's Hill	Yarra Yarra Plenty	18
16. MORNINGTON.		Paradise Hill Arthur's Hill Martha		11
17. BASS.		Hoddle Wilson	Franklin	
18. DOURO.	Alberton	Tom's Cap	Albert Tara Rivulet	
19. HADDINGTON.		Baw Baw Useful	Tarnhill M'Alister Thompson	
20. BRUCE.		Wellington Kent Valencia M'Mellan Ben Croachan	Mitchell Avon M'Alister Tarnhill	
21. ABINGER.		Tanbo Hopeless Fainting Range	Tanbo Nicholson	
22. COMBERMER.		Cobboras Delegete Hill	Native Dog Tornginbooke Jingalala or Dedne Bendoc Snowy Ingeegoodbee	
23. HOWE.		Genoa Peak Canawurra	Genoa	

What stations have been proposed for towns in the interior beyond the limits of these Counties?

The River Murray, forming various channels, which unite at certain places, and being composed of several rivers which join at certain points; such situations present favourable sites for towns, on account of thoroughfares at the crossing places.

What situations of that description are already known?

Moama at the confluence of the rivers Campaspe, Goulburn and Murray. Deniliquin, on the Kyallyte, or most direct and central channel of the Murray. Moulamein, at the junction of the Coates with the Kyallyte. Conargo where the Yanko-Yanko joins the Coates, and Turora at the junction of all the branches.

What are the two thoroughfares already in use across these streams?

The road by Swan Hill and Turora, to cross the Murrumbidgee below the junction of the Lachlan.

Where would that route lead?

From Portland Bay through Australia Felix, across the Murray and Murrumbidgee, and up the Lachlan to Bathurst.

What kind of country would that route traverse?

Across beautiful open plains, and by abundance of water.

What other general route would cross the Murray?

That from Melbourne along the valley of the Campaspe to Moama, Deniliquin, and Conargo, to the open country between the Murray and Murrumbidgee.

Are both these routes to the westward of the present road to Port Phillip?

Yes.

What determines the eligibility of these places for towns?

An abundant supply of water, excellent soil, and the direction of such lines of thoroughfare.

Do not the supply of water, the quality of the soil and the direction of roads, all depend on men's labour?

They may be much modified and improved thereby, but some sites are naturally much better in these respects than others.

What makes the difference between a bush road and a made road?

The one should be the best that could be found the surface in its natural state: the other in a direct in which distances should be shortened, and obstacles removed or diminished by labour.

Are roads of these two kinds likely to coincide?

No, the directions will in most cases be different.

What are the operations necessary for the construction of roads?

Clearing of trees and stumping, side cutting, draining, levelling, tunnelling and metalling.

What are the obstacles to road-making in New South Wales?

Deep rocky gullies.

How can they be avoided?

By following the connections of ranges.

How are the connections of ranges to be found?

By surveying the mountain summits.

What other advantages are derived from the survey of summits?

The sources and also the extent of the basins of rivers are ascertained.

What political purposes also require the survey of summit ranges?

The determination of boundary lines of colonies, counties, and grazing runs.

What would be the result of a complete survey of such ranges?

That the map of the whole country would be complete.

How are Maps made?

From astronomical observations, trigonometrical measurement, and chain measurement.

What is derived from Astronomy?

The true place on the globe.

What from trigonometry?

The true position of elevated points.

What from actual measurement?

The direction of sinuous lines.

What counties have been proposed for the Northern parts?

*Thirty.*

*What to the Westward of the old colony?*  
*Seventeen.*

## LIST OF NORTHERN COUNTIES.

Counties.	Provincial and other Towns.	Mountains.	Rivers.	Contents in square miles.
STANLEY.	Brisbane Ipswich	Flinder's Peak Goolman Cotton Gravatt Petrie Sampson Vane Tempest	Brisbane Stanley Logan Bremer Caboolture Pine	1724
CANNING.	Toorbul	Glass Houses Mt. Brisbane Lister Peak	Brisbane Stanley Caboolture Morroochydore Mooloolah	1576
MARCH.	Maryborough		Mary Wide Bay River Morroochydore	1925
LENNOX.		Boorgoone Seven Hills		2300
FITZ ROY.			Dawson Yarook or Stuart	2225
CAVENDISH.			Brisbane	2081
AUBIGNY.	Drayton		Condamine	
CHURCHILL.		Flinder's Peak Mitchell Cordeaux Fraser Forbes Edwards Goolman Paget Wilson's Peak French	Brisbane Bremer	1174
MERRIVALE.	Warwick	Mitchell Cordeaux Wilson's Peak Leslie	Condamine	
BENTINCK.			Macintyre Brook	

Counties.	Provincial and other Towns.	Mountains.	Rivers.	Contents in Square
11. BULLER.		Wilson's Peak Leslie Clunio Barnay Lindsay	Clarence's Richmond Cataract	234
12. WARD.		Flinder's Peak Kent's Peak French Greville Wilson's Peak Barnay Lindsay Knapp's Peak Glenbrook Gipps Wangalpong Clunio	Logan Albert Teviot Brook Barrow Perry	168
13. ROSS.		Warning Gipps	Richmond Tweed Brunswick	177
14. RICHMOND.		Double Duke	Richmond	143
15. DRAKE.		Capoombeta Ben Lomond	Clarence Mitchell Cataract	122
16. CLIVE.		Capoombeta Joubles		
17. GOREN.		Capoombeta Joubles Benlomond	Severn Macintyre	
18. HARTLEY.			Bundarra Rocky	
19. GRESHAM.		Ben Lomond Chandler's Peak	Mitchell Boyd	169
20. RALEIGH.		Camelback Amindrus	Mitchell Boyd Clarence Orara Bellingen Cold Stream South Boyd	178

Counties.	Provincial and other Towns.	Mountains.	Rivers.	Contents in square miles.
1. CLARENCE.	Grafton	Whoman or Peaked Hill of Capt. Cook Elanie Double Duke	Clarence Orara Cold Stream Woolli Woolli Landon	1215
2. DUDLEY.		Imbo Peak Yarrahapinni	Macleay Nambucca Bellingen Odalberree yke	2075
3. SANDON.	Armidale	Ben Lomond Chandler's Peak Duval's Mt. Black Note	Macleay Dyke Apsley	1740
4. VERNON.		Kipparah Black Note	Macleay Apsley Tia	
5. INGLIS.	Tamworth	Purrenbyden Danglemah Gulligal Ballemballa Moonbey	Peel Cockburn Macdonald	
6. DARLING.			Namoi Manilla Macdonald	
7. POTTINGER.		Benelong	Conadilly Namoi	
8. BUCKLAND.		Moan Terrell Towari Tingaroo Turi Temu	Peel Conadilly	1484
9. PARRY.	Tamworth	Hanging Rock Muc Reyime	Peel Cockburn	1240

Counties.	Provincial and other Towns.	Mountains.	Rivers.	Contents in Square Miles.
32. HAWES.		Wreckinbe Hanging Rock Muc Boyime Sea View Basaltic Rock Woolumbland Currakabah	Hastings Bernard Manning Wargo	1450

**COUNTIES TO THE SOUTH AND WEST OF THE MIDDLE DISTRICT.**

Counties.	Provincial and other Towns.	Mountains.	Rivers.	Contents in Square Miles.
1. NAPIER.		Gotta Rocks	Castlereagh	
2. GOWEN.		Warrabangle Range Moorogan Bemgal Bourgen Toondooran or Vernon's Pic	Coolaburragundy	
3. LINCOLN.	Dubbo		Macquarie Erakine or Talbragar	
4. GORDON.	Kurea	Harvey's Range Three Brothers Arthur Coutombals	Macquarie Bell Little Bogan	
5. ASHBURNHAM.		Nangar Canobolas Marga Mandagery	Lachlan Balubula	
6. MONTEAGLE.	Mulyan	Widdin Congo Mannar Jimalong	Lachlan Boorawa	



Counties.	Provincial and other Towns.	Mountains.	Rivers.	Contents in Square miles.
BARREN.	Binalong Murringo Bookham Bowling Jugion	Bundango Congo	Murrumbidgee Yass Boorowa	1350
BARRENDEN.	Gundagai Wogga Wogga		Murrumbidgee	
BARTYARD.	Gundagai Wogga Wogga	Tarcatta	Murrumbidgee Tumut	
BULBURY.	Albury		Murray	
BURRUMBUCH.	Tumut	Talbingo Bogong Majongbury Junil	Tumut Goodradigbee Goubaragandra Murrumbidgee	1300
BURWELL.		Murray Centry Box Clear Tonnant Fabra Snowy	Goodradigbee Murrumbidgee Cotter	
BURSFORD.	Cooma Bunyan	The Brothers Coolringdong The Peak One Tree Hill Blue Peak Cooma Hill Bigbadja Hill	Murrumbidgee Bredbo Bigbadja Umaralla Kybeyan Queanbeyan	
BURRUM.		Dromedary Mumbulla Bigbadja Hill Ajimgagua	Shoalhaven Moruya Dry Deua Bermagabee	1700
BURKLAND.	Eden Boyd	Mumbulla Nimmitabil Wolumla Peak Imlay	Broga Bemboka Rega Towamba Pambula Genoa	1920
BURLESLEY.	Bombalo	One Tree Hill Mount Cooper The Telegraph Bell's Peak Bungees Peak Bare Hill Coolangubra	Snowy M'Laughlin Delegete Little Plain Coolumboca Bombalo	1700

Counties.	Provincial and other Towns.	Mountains.	Rivers.	Contents in Square Miles.
27. WALLACE.		Table Top Bull's Peak Ram's Head Snowy Mowamba Wulwe Jinny Brother The Peak Bald Hill Gygederick Hill Bobundara Hill Round Mountain The Pilot	Snowy Eucumbene Crackenbac Jacobs or Tongaro Gungarian Moyangul Ingeegoodbee	1970

What general thoroughfares appear to be available in continuity along the interior side of the mountains?

From Wagga Wagga on the Murrumbidgee to Benni-long, and across the Lachlan and the heads of the Bogan to the River Macquarie, towards the confluence of that river, the Castlereagh, and the Darling, near Wyabry—crossing that river at Wyabry to the Narran, and along the bank of that river and the Balonne into the northern route up the Maranoa.

Whence proceeds the Northern route?

From Liverpool Plains and along the Nammoi, to cross the plains westward of Hardwick's Range, to the Gwyder and the Mooni, to St. George's Bridge on the Balonne.

Is there a bridge at that point?

No, only a portion of rock favourable for the passage of the great river Balonne there.

Is that in a good direction for the continuation of the interior route northward?

Yes.

How would it be connected with the good country of New England?

*By the banks of the river Gwyder.*

*How with Darling Downs?*

By the valley of the river Condamine, (or Balonne).

Why are these lines preferable to others?

Because they follow the courses of rivers and are therefore supplied with water.

Are such lines to be considered bush roads?

Yes, and good, because carried over the open interior country.

What roads are in use nearer the coast?

From Tamworth, there is a road through the district called New England, to Drayton, and across the Coast Range into the valley of the Brisbane by a pass near Mount Cordeaux.

What facilities are afforded by the level interior country for railroads?

When a railway can be completed to Goulburn, the thirty-fifth parallel of latitude marks very nearly the line for its extension to Adelaide across a territory almost level.

What are the chief impediments to such a line?

Two deep rivers, the Murrumbidgee and the Murray, whose waters would be nevertheless indispensable for the supply of the engines.

Is that line not across extensive dry plains of poor soil?

Yes, but it would connect with Sydney and Adelaide the rich alluvial lands on the two rivers, which lands are by far the best spots in all Australia for cultivation.

Why?

Because the soil is deep and rich—the water inexhaustible.

Is not the river Murray also in the way?

It is, and very broad there; also probably, salt.

Are there not also swampy flats and plains subject to inundation?

There may be such obstructions.

Is this not a visionary plan?

It is not visionary to deal with the elements as we find them in Australia.

What determines the importance of the lands on the Murray?

*The concentration of many waters.*

What are the chief centres of population ?

The cities of Sydney, Melbourne, and Adelaide.

What would be the effect of that Western Railway ?

To connect the centres of population with the main concentration of the waters.

How would this connect Port Phillip ?

By a branch line to Deniliquin.

In what direction is the Northern level interior route continued from St. George's Bridge ?

Up the valley of the Marañón.

In what direction was that route intended to lead ?

To the Gulf of Carpentaria.

## CHAPTER V.

### OF THE INDIAN ARCHIPELAGO.

What is the distance across Torres Straits, from Cape York to New Guinea ?

About eighty miles.

What is the extent of New Guinea ?

From 1200 to 1400 miles in length, and varying from 150 to 200 miles in breadth.

What is the name of that part where the Dutch attempted to trade ?

Lakshia, a small island off the peninsular part of New Guinea.

Did they find the natives very barbarous ?

Yes.

What are the supposed causes of their barbarous disposition towards strangers ?

The faithless and arbitrary conduct of the Ceramese, who to retain their exclusive trade with the coast, inspire them with hatred and aversion to all foreigners but themselves.

What are the chief productions sought by traders ?

Massoy bark, nutmegs, trepang, tortoise-shell, pearls, edible birds' nests, birds of paradise, and other articles of value.

What articles are given in exchange?

Coarse white calico, arrack, tobacco, iron-ware, &c.; hanks of cotton twist for the manufacture of thread, and dyed of a red colour, are taken in lieu of small money.

Where is the iron manufactured?

In the Ceram and Goram Islands; the swords made there being of excellent temper, and much in demand throughout the Archipelago of the Moluccas.

What is the character of the Ceramese?

Superior skill in the manufacture and use of arms.

What is their religion?

Mahommedan.

On what people do they chiefly make war?

On the Papuans or natives of New Guinea whom they carry off as slaves.

What is their principal branch of trade?

That with Bali, an island adjoining the east end of Java.

What are the most important articles exported?

Slaves, nutmegs, trepang, tortoise-shell, and edible birds' nests.

What do they take in exchange?

Powder and shot, muskets, small cannon, calicoes, china ware, iron work, &c.

Where do they obtain their vessels?

They obtain their smaller prahus from the Ki Islands and the larger ones from Bali.

Of what people do their crews chiefly consist?

Of Papuan slaves.

When a stoppage is put to their commerce what is done with these vessels?

They resort to piracy, and are dreaded by the inhabitants of the smaller islands.

Are the Ki Islands thickly peopled?

Not so much so as other islands around.

Are they mountainous?

Yes.

What are the names of the principal islands of that Group?

Great Ki, Little Ki, and Ki Watela.

What is the chief resort of the traders?

Dula, a village situated in a bay on the west of Little Ki, where vessels are built, remarkable for durability and good construction.

Whence do these traders come?

From Macassar and Bahda.

Besides ship-building, what are the other products of the Ki Islands?

Ki is famous for its potteries, and tortoise-shell obtained at most of the islands, but the best is from Serra.

What kind of turtle is the tortoise-shell made of?

The hawks' bill turtle, thirteen pieces of which form the shell of the turtle, are called collectively a "hawks' bill tortoise-shell."

What is the character of the people of the Ki Islands?

They are more mild and peaceable than most of the neighbouring islands.

What is the largest island between the Ki Islands and Port Essington?

Timor-laut one of the Tenimber Islands.

What animals exist there?

The island abounds with wild cattle, which are tame and have upright horns; wild hogs are also to be found in abundance.

What islands lie to the eastward of the Ki Islands?

The Arru Islands.

What is the chief article of trade there?

The trepang.

What is the trepang?

It is a sea-slug, found chiefly on banks composed of clay mixed with fine sand, and covered with seaweed, which at low water appears above the surface of the sea. It is much in demand with the Chinese, who make it into soups and ragouts.

Which of these islands is of importance for the pearl fishery?

Vorkay, an island at the south-eastern extremity of the group.

Where are the pearl banks?

Near some small islets on the Eastern side of Arrus between them and Vorkay.

Is it safe for a vessel to approach these banks?

It is almost impossible for a ship to approach the eastern side of the Arrus, owing to the banks and reefs.

What are the chief villages on Vorkay?

New Affara, Longa, Uri, and Goor, before the last of which lies a great pearl bank.

What articles of merchandize besides are produced by the Arafuras?

Birds of paradise, sago, &c.

How do they kill and preserve the birds of paradise?

They are shot with arrows, when they are opened and deprived of their entrails, then wrapped in a thin leaf, and hung to dry in the smoke of the fires, after which they are ready for exportation.

What is the religion of the Arafuras?

Mahomedan and Christian, many have been formerly converted by Dutch missionaries.

Has slavery been abolished there?

No, slaves still form a considerable branch of commerce. There are slaves who offer themselves as bondsmen that they may obtain the necessaries of life.

What is the name of the group of islands between Timor-laut and Timor?

The Serwatty Islands.

What is the religion of these islanders?

Almost one-third are Christians, in the Island of Kissa.

What is the character of the people?

There is a great variety of character: those of Kissa are a very excellent quiet and orderly people; they are tolerably educated, and can read and write very well.

Are the inhabitants of any other islands equally well disposed?

The natives of Babian, near Java, are a race of extraordinary docility and industry.

Where are monkeys only to be found throughout the Moluccan Archipelago?

Only on the Island of Batchian, near the south end of Gilolo.

Where is Amboyna?

Considerably to the northward of Timor.

Are the inhabitants Christians?

Almost to a man : it is the chief seat of Christianity in that part of the world.

What is the amount of population?

About thirty-five thousand.

What is their written language?

The Malayan.

Is that the language of the country?

No, their language is only a dialect of the Malayan, which differs very much from the pure language.

Is water scarce at Kissa?

Sometimes after long drought.

Are there Chinese in these Islands?

Yes, there is scarcely an island where there are not more or less Chinese.

What are the chief products of Timor?

Much gold dust is found at Timor; and in the adjacent islands spices of all kinds, and much good rice is grown.

What part of Australia is nearest to Timor?

Port Essington.

What is the difference between the rivers on that coast, and those on other parts of the shores of Australia?

They are almost without exception accessible to ships of burthen.

What are these rivers?

The Liverpool River to the Eastward of Port Essington; and, to the Westward, there are the three Alligator Rivers, the Adelaide, the Victoria, and the Prince Regent Rivers, which all possess the same character. The South Alligator River was traced by Capt. King more than one hundred miles up from its mouth.

Where is the Island of Borneo?

Under the Equator; between Australia and China.

Name the two great islands to the westward and southward of Borneo.

Sumatra and Java.

Name the great island nearest to Borneo on the eastward.

*Celcles.*

Name the extensive group of islands north-east of Borneo.



The Phillipine Islands.

Name the Molucca or Spice Islands.

Gillolo (the largest), Ceram, with Ternate and Tidore, smaller islands holding a supremacy over the larger.

Name the principal Clove Islands.

Amboyna, Haranka, Honima.

What islands principally produce nutmegs?

The ten small Banda Islands of which the principal are Neua, Pulo Ay and Latoir.

What is the chief port of the Phillipine Islands?

The city of Manilla in the island of Luzon.

What is the supposed number of the Phillipine Islands?

About 1200, whereof 400 are of considerable size.

What did La Perouse estimate the population at?  
3,000,000.

How was the trade between the Phillipines and Aca-pulco in Mexico formerly conducted?

In one galleon of 1200 or 1500 tons.

Of what did her cargo consist?

Of the manufactures of China and Hindostan, and the produce of the Spice and Sunda Islands.

What cargo did she bring back?

Cochineal, cocoa, Spanish wines, oil, wood, and bar-iron, but chiefly ballast.

In what months did she sail?

In July or August, the voyage taking three or four months.

How long did she take on the return voyage?

Not half that time.

What was this owing to?

Winds and currents to be hereafter explained.

What is the extent of the largest of the Phillipines (or Manilla)?

It is reckoned by the Spaniards to be 160 Spanish leagues in length and 35 or 40 in breadth.

What is its situation very favourable for?

It is highly advantageous in a commercial point of view, as placed between the eastern and western continents; having China on the N., Japan on the N.E., the ocean on the E., and to the W., Malacca, Siam and Cochin China.

Are the inhabitants Christians?

Almost to a man: it is the chief seat of Christianity in that part of the world.

What is the amount of population?

About thirty-five thousand.

What is their written language?

The Malayan.

Is that the language of the country?

No, their language is only a dialect of the Malayan which differs very much from the pure language.

Is water scarce at Kissa?

Sometimes after long drought.

Are there Chinese in these Islands?

Yes, there is scarcely an island where there are more or less Chinese.

What are the chief products of Timor?

Much gold dust is found at Timor; and in the islands spices of all kinds, and much good rice is raised.

What part of Australia is nearest to Timor?

Port Essington.

What is the difference between the river coast, and those on other parts of the shore of Australia?

They are almost without exception free of burthen.

What are these rivers?

The Liverpool River to the northward of Port Jackson; and, to the Westward, the Macquarie, the Darling Rivers, the Adelaide, the Roper, the Regent Rivers, which all empty into the Gulf. The South Alligator River, which empties into the Gulf, is more than one hundred miles long.

Where is the Island of Timor?

Under the Equator.

Name the principal cities.

Macassar, on the northward of Timor.

Sumatra.

Name the principal cities.

Sumatra.

Celebes.

Name the principal cities.

Borneo.

The Phillipine Islands.

Name the Molucca or Spice Islands.

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What is the capital of Java ?

Batavia.

What are the principal settlements in Sumatra ?

Palembang on the eastern side, has long been the English settlement.

Where is the Dutch settlement situated ?

On the western side, Bencoolen.

Name the different seas amongst these islands.

The China Sea is bounded by Borneo and the Philippine Islands on the south-east, and by the Malay Peninsula, and Cochin China on the north-west. The Java Sea, southward of Borneo between it and Java. The Flores Sea, between Celebes and the Island of Flores. The Banda Sea, between Ceram and the Serwatty Islands, and the Mindoro or Sooloo Sea, between Borneo and the Phillipine Islands. There is also the Timor Sea, between the island of that name and Australia.

What are the principal Straits ?

The Strait of Banka, the Strait of Gaspar, and the Carimata or Billiton Passage ; all between Sumatra and Borneo ; the Strait of Sunda between Sumatra and Java ; the Straits of Bally, Lomboek, Allas, Sapy, Merngerye, Flores, Pantar, and the Ombay Passage, all in the same chain of Islands ; the Strait of Macassar, between Borneo and Celebes ; the Mollucca Passage between Celebes and Gillolo ; the Gillolo passage, eastward of Gillolo Island ; Dampier's Strait, between Waygion and New Guinea, and other minor passages between the Islands.

What are the chief productions of Borneo ?

Rice, sago, black pepper, camphor, honey, cotton, cloves, dyewoods, sandal-wood, ebony, gold, iron, tin, copper, diamonds, and antimony.

On what part is the diamond found ?

On the south and the west coast, the principal mines being at a place called Landak, the same country being most remarkable for the production of gold.

What other metals are found in the Indian Archipelago ?

Iron, copper, and tin, also some lead.

What Island affords the most gold after Borneo ?

Sumatra.

What is the next abundant region ?

**The Malay Peninsula.**

**The next ?**

The Islands of Celebes and Luçon. Gold is also found in New Guinea, but in what quantity is not known.

**What island is celebrated for its pearl fisheries ?**

The Island of *Sooloo* or *Suluk* to the S.W. of *Mendanão*.

**When does the fishing take place ?**

During the calm which succeeds the western monsoons, while the sea is so smooth and clear that the eye can discern objects under water to the depth of 40 or 50 feet.

**Where is the capital ?**

On the N.W. part of the island.

**What is its population ?**

6,000 souls.

**How is it governed ?**

By the Sultan of Sooloo who has a small fleet and holds several neighbouring islands.

**What new settlement has been established in Borneo ?**

That of Sarāwak on the river of that name.

**In what part of Borneo is Sarāwak ?**

In the north-western angle, nearly opposite to the British settlement of Singapore.

**What island has been recently ceded to British authority, on the east coast of Borneo, for a navy and military station ?**

Labuan.

**What are the other British settlements in the Indian Archipelago ?**

Singapore, an island situated off the southern extremity of the peninsula of Malacca, and the Island of Pulo-Penang on the west coast of the same peninsula.

**What are the advantages of Pulo-Penang ?**

It is a safe harbour, an excellent roadstead, in which respect it has been called "the gem of the eastern seas," which are there frequently disturbed by heavy squalls with terrific lightning called "Sumatras."

**What is the extent of Singapore ?**

As a commercial emporium, Singapore has risen in the course of a few years to a very high degree of im-

portance. There is already a large Chinese population (not less than 20,000) to which yearly additions are made. The Chinese are the principal mechanics and labourers of the town; they are also employed as domestic servants.

## CHAPTER VI.

### OF THE PACIFIC OCEAN.

What is the general name of the sea to the eastward of Australia?

The Pacific Ocean.

What countries form its shores?

Australia, New Guinea, China, and Eastern Asia, bound it on the west and north-west; Kamtschatka and North America on the north, and North and South America on the east; the southern portion extending to the Antarctic Ocean.

What seas, belong to this Ocean?

The Behring sea between the Aleutian Isles and Behring Strait, is the most northern part. The next on the westward of this sea and the Peninsula of Kamtschatka is the sea of Okotsk, which lies between the eastern coast of Siberia, the great island of Tarrakai, the island of Yesso, and the Kurilles. This sea is also called Penjinsk. The sea of Japan washes the coasts of Corea and Mantchouria, and is separated from the main Ocean by the islands of Nippon, Yesso, and Yarrakai.

The passage into the sea of Okotsk, is by the Strait La Perouse. The Strait of Sangar with the main Ocean; and the Strait of Corea with the Yellow Sea, or eastern China Sea, which is separated from the larger China Sea by the Islands of Loo Choo and Formosa. Lastly, the name of Corallian Sea has been given to that portion washing the north-eastern shore of Australia, and which lies within several well marked chains of islands forming a curve nearly concentric with the eastern coast chain of Australia.

Name the principal islands in that curve.

*New Hanover, New Ireland, the Islands of Solomon, the New Hebrides, and New Zealand.*

Name the two largest islands within that curve.

New Britain, situated between New Zealand and New Guinea, and New Caledonia, to the south-west of the New Hebrides.

Name the Archipelago of smaller islands to the south-east of New Guinea.

The Louisiade Archipelago.

What name is given to the extensive Archipelago, northward of New Guinea?

The Archipelago of the Carolines.

What names have been given to the various groups of islands eastward of the New Hebrides?

1st,—There are the Fidgee Islands, and the Friendly or Tonga Islands; 2nd,—The Navigators' Islands, and Cook's Islands; 3rd,—The Society Islands; 4th,—The Mendana Islands and the Low Islands.

Which is the largest island of these groups?

Sandalwood Island of the Fidgees; the next seems to be Pola of the Navigators; the others being of less extent, as they are further to the eastward.

Name the two other detached groups of islands in the Pacific.

The Galapagos Isles, to the westward of Quito, and the Sandwich Islands.

What general name has been given by Malte Brun to these numerous islands?

Oceanica or Polynesia.

How did that geographer describe them?

As "the magnificent fragments of a former world scattered over the mighty ocean."

How is Polynesia described by Walckenaer?

As "the debris of an immense portion of the habitable hemisphere, which has been overwhelmed by the waves of the ocean."

What is it likely to prove eventually?

A beautiful variety in the distribution of land and water, by which exuberent vegetation, a delicious climate, and a tranquil ocean, may be made subservient to man's use and enjoyment by means of steam navigation.

## CHAPTER VII.

## OF THE CURRENTS IN THE PACIFIC.

What has been observed of the currents of the Pacific Ocean near the Gallapagos Islands?

Captain Fitz Roy says, that "in some places they run three, four, or even five miles an hour generally, but not always, to the north-west. On one side of an island the temperature of the sea is sometimes found to be near eighty, while on the other side the water is at less than sixty degrees."

To what does he attribute these striking differences?

To the cool current which comes from the southward along the coast of Chile and Peru, meeting a far warmer stream from the neighbourhood of the Bay of Panama.

What is the general direction of the current of the Pacific?

A great ocean current sets from south to north, and north north-west, causing a degree of coldness on the Peruvian coast, which was erroneously ascribed to the vicinity of the snow-capped Cordilleras.

What are the turning points to that antarctic drift current on the Peruvian coast?

First, in the most concave part of its curve in  $18^{\circ}$  of latitude S. ; secondly, at the most convex part at Cape Blanco in latitude  $5^{\circ}$  north.

What effect are these said to have on the current?

To modify at once the ocean currents, the climate, and the character of the vegetation.

What renders this influence of the coast line more powerful?

The immediate vicinity of the high mountain chain of the Andes.

How do the currents affect navigation?

The current favours any voyage along the coast from south to north, to such an extent that one may easily sail in four or five days from Callao to Guayaquil, and in eight or nine days from Valparaiso to Callao (a distance of more than sixteen hundred miles) when, on the return of the current, several weeks, and in some cases even months, are required.



What is the consequence of the mist and fog occasioned by the warm current to vessels sailing along the coast?

That ships sailing from Quilca to Callao de Lima, are unable for several days to obtain any observations of latitude, and are often carried past the harbour of Callao to Huanra and Guarmey, while according to log reckoning the voyager believes himself to be still to the south of Callao.

Where are the mist and fog most dense?

Between Pisco and Lima.

What is the direction and rate of the current from Cabo Blanco?

Between Lima and Cabo Blanco it suddenly leaves the coast and mixes with the general *Rotation* or *Equatorial Current*, whose mean velocity (according to Humboldt's observations) was from seven to eight miles in twenty-four hours.

What is the origin of the *Antarctic Drift* current according to Duperrey?

That it is a mass of water in an extent of more than sixty degrees of longitude, driven by melting ice, and the prevailing south south-west winds from the south pole, first towards the north north-east, then north-east, and lastly east north-east, to where it meets the coast of Chili when it divides, one part flowing south to Cape Horn, the other northwards, as already described.

Where is the *Equatorial Current* observed?

At the distance of twenty-two degrees of longitude from the Continent, and under the latitude of  $20^{\circ}$  south. The *Equatorial Current* of the Pacific Ocean is formed by the sudden turn westward of the coast current, and runs thence in a westerly direction, following the impulse of the trade-winds.

What are the limits assigned to this current by Duperrey?

The southern limit coincides with the parallel of  $26^{\circ}$  south, while its northern border may be reckoned at  $24^{\circ}$  north, so that the oceanic water moves in a westerly direction over a space of fifty degrees, or nearly the third part of the distance from pole to pole.

What currents prevail in other parts of the Pacific?

The *North Equatorial Counter current*, between latitudes  $5^{\circ}$  and  $10^{\circ}$  north, but the numerous archipelagoes of islands, and the extensive groups of coral reefs in the Pacific, serve to intercept the regular westerly progress of its warm intertropical current, and to determine more than one circuit of compensation and revolution in each hemisphere.

What do these numerous islands and coral reefs represent with regard to currents?

They partly supply the place of a continent in defining separate basins of revolution for the currents of this vast ocean, particularly in the South Pacific, where these obstructions are scattered over wide areas.

What is said of the New South Wales alternating current?

"From the parallel of  $28^{\circ}$  south to the south of Van Dieman's Land, the current flows during the summer months (from August to May) as follows: from the land to a distance of seven leagues it sets to the south-west, one and a quarter mile per hour; in the space between seven and twenty leagues distance from the land it sets towards the north-east, three quarters of a mile per hour, and in the winter, in an opposite direction." These alternating currents are supposed to depend upon monsoon winds.

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## CHAPTER VIII.

### OF WINDS, &c. IN THE PACIFIC.

What impediments besides currents have to be considered in the navigation of the Pacific.

Frequent calms, which prevail in the vicinity of the island groups of the Southern Hemisphere, and add considerably to the length of voyages.

What are the two lines of communication between South America and the Southern part of Asia?

*Ships bound from Chili, Callao, or Guayaquil, direct*

to China, usually steer in a straight line to the Mendana Isles (the Marquesas of the Spaniards and the Washington Islands of the Americans). In this part of the voyage, they are assisted by the south-east trade winds; they then pass to the south of Gilbert Islands, and the east of the Pellow Islands; their direction being afterwards determined by the direction of the monsoons in the China Sea. They either sail through the strait of St. Bernadino, and avail themselves of the south-west monsoon; or north of the Phillipines, through Bashee Isles, and here cut the north-west monsoon.

What precaution is necessary on this last route?

If the mariner does not exactly observe the required latitude, and approaches the coast of China even a single degree too far to the south, the voyage may be prolonged several weeks. The other direction of this great route (one of the largest but most pleasant of voyages) is taken by vessels intending to take in fresh water or provisions, in which case they sail to the Sandwich Islands, and avail themselves as soon as possible of the north-east trade-wind which blows much stronger, and with greater regularity than the south-east trade. On this route ships also avoid the frequent calms which prevail among the islands.

What is the course of ships taking the north-east trade?

The voyage may always be made in a straight direction by sailing to the north of the Sandwich Islands, far above the meridian of the Mariana or Ladrone Islands, a minor groupe of the Caroline Archipelago.

What is the course taken in sailing from the Sandwich Islands?

From the Sandwich Islands, the voyager prefers a course in  $12^{\circ}$  to  $15^{\circ}$  of north latitude, where he is more certain to find a strong trade wind than in the higher latitudes, especially above  $20^{\circ}$ ; afterwards he must steer a more or less northerly course, according to the monsoon, in order to arrive in the latitude of Macao.

*What was the route formerly followed by the Spanish galleon on the voyage from Acapulco to Manilla?*

Nearly the same as the above to the latitude of the Sandwich Islands, where it usually anchored, and afterwards steered to the Marianas, where it came to anchor at Guam or Gauhan, in order to communicate the instructions to the government, and take in fresh provisions.

What route did it pursue afterwards?

It directed its course eastward of Manilla to Cap Espiritu Santo, on the Island of Samar, near which it was once taken in a celebrated engagement by Lord Anson.

What is the usual course for vessels from South America or Mexico to Australia?

They pursue the first mentioned of these routes to the 165th degree of west longitude, when they fall in with north-west winds, and steer to the westward of the Fidgees towards Sydney.

What is the length of time for the voyage from Acapulco to Manilla or Canton?

From fifty to sixty days.

What is the usual duration of the voyage from the Sandwich Islands to Petropaulovski in Kamstchatka?

Thirty days.

From San Francisco to Tahiti?

Fifty days.

From Tahiti to Cape Horn?

Fifty five days.

From Callao to Valparaiso?

Eighteen days.

From Guayaquil in Peru to Acapulco in Mexico?

From twenty to thirty-five days.

From Guayaquil to Valparaiso?

Thirty-seven days.

From Guayaquil to Lima?

Twenty-five days.

Is the time of these voyages in fair proportion to the distances?

No; calms and currents, and adverse winds greatly impede sailing vessels.

Has steam navigation been introduced along the coast of Peru and Chili?

Yes, with great advantage, by Mr. Wheelhouse.

What is the difference between voyages by sailing vessels there, and by those impelled by steam?

The voyage from Guayaquil to Lima is made by the steamer in five days, instead of from twenty-five to thirty-six, the usual time of sailing vessels. From Arica to Cobija they go by steam in two days, a sailing vessel took twenty-two.

Is coal abundant in South America?

The quantity is said to be unlimited in the southern country.

Where are the present coal mines?

At Talca in Lat.  $35^{\circ} 36'$  S., longitude  $70^{\circ} 51'$  W.

How is the voyage made from India to South America?

The voyage is generally made during the south-west monsoon, and ships keep to the north of the limits of the north-east trade wind, which is usually met with only in latitude  $28^{\circ}$  and  $29^{\circ}$  N.

What wind do they find there?

A wind called the "western trade," from its constant prevalence, with which they sail to the coast of California, in order to correct their longitude; but if this be not necessary, they direct their course straight to the place of their destination, cutting the trade wind at a very acute angle.

What is the course of ships bound for Peru or Chili?

It is the same; they continue southwards till they reach the south-east trade wind; they have to cut this towards the west, and seek the south-westerly winds in latitudes  $26^{\circ}$  to  $28^{\circ}$  with which they reach the coast, and then sail to the place of their destination.

How do ships proceed in sailing from China during the north-east monsoon?

They must take their course in the Southern Hemisphere, where the voyage is considered dangerous on account of the numerous islands and coral banks through which they must sail.

At what part of the voyage do they clear these dangers, and fall in with constant westerly winds?

On reaching the meridian of New Caledonia and New Zealand.

What route do they then fall in with?

That of vessels from Port Jackson and Van Dieman's Land on the voyage to Europe round Cape Horn.

What is the average length of voyage in time from Van Dieman's Land to Cape Horn?

Forty-four days.

What is the probable limit of drift ice, or icebergs in the Southern Hemisphere?

Between the latitudes of  $50^{\circ}$  and  $60^{\circ}$  S.

What is the length of voyage from Canton and Manilla to the Sandwich Islands?

Fifty-five days.

And to Acapulca by the same route?

From ninety to a hundred days.

What is called the Great Eastern Passage from Europe to China?

Vessels enter the Pacific by sailing round Van Dieman's Land, thence towards the New Hebrides, and to the Ladrones, or Mariana Isles, making the whole passage from the Cape of Good Hope to Canton in ninety days.

What is the Outer Eastern Route from Sydney to Java, India, &c., in March and September?

From Sydney they pass to the eastward of Howe's Island, and then sail due north to the latitude of Espirito Santo; thence north-west to pass between New Britain and New Ireland, and by the north-western part of Papua or New Guinea, through Dampier's Strait between the islands of Ceram and Booroo, into the Archipelago of the Moluccas, where the course is either turned northward by Celebes to Batavia, Singapore, &c., or through the Ombay Passage near Timor to Calcutta, Madras, &c.

Has steam navigation been introduced into these seas?

Not for the purposes of regular communication.

Is coal abundant?

The quantity seems unlimited along the coast of New South Wales.

Is it found also in the Indian Archipelago?

Captain Fitz Roy saw an island wholly composed of *Coal* off the northern coast of Borneo, and there is also

abundance of coal in the island of Labuan recently ceded to Great Britain, and in many other places.

## CHAPTER IX.

### OF NEW ZEALAND.

**What is the character of New Zealand?**

It is well adapted for those branches of agriculture, and for the production of fruits, known in Europe.

**Where are the settlements of the New Zealand Company?**

These are situated chiefly on the opposite shores of the south end of the northernmost of the islands of New Zealand, and the north end of the large or Middle Island. The settlements in the middle and north end of the North Island, are under the authority of the British Government.

**What has been recently discovered in the Middle Island?**

A great extent of open grassy land.

**In what part of the Middle Island?**

On the plain behind Port Cooper.

**What is said to be the extent of that plain?**

120 miles long and from 35 to 40 miles broad.

**What is the most southern settlement on the Middle Island?**

Akaroa.

**What is said of its climate?**

That it is too cold.

**What is the next settlement to the northward?**

Nelson, belonging to the New Zealand Company.

**What is said of Nelson?**

That it contains much rich land, for good agricultural purposes, but that the harbour is far from being a safe or good one, and the country in the vicinity of Cook's Straits, subject to very strong gales of wind, which are unfavourable for the cultivation of the grape.

**What is said of Port Nicholson?**

That it is liable precisely to the same objections as Nelson, and that the coast is very precipitous, leaving no level land in the vicinity of the town; the land being also heavily timbered. The soils on the sides of the hills and in valleys, are thought well adapted for the cultivation of the vine.

What settlements are considered, on account of geographical and local positions, preferable to the other settlements in New Zealand?

Auckland and the Bay of Islands.

What are the arguments in favour of Auckland?

That the soil is fit for the cultivation of the vine, and fit also for other branches of agriculture; within a circuit of not more than seven or eight miles there are no less than the remains of twenty extinct volcanoes, around all which the soil is rich and peculiarly good for vines; the soil being also well watered, and completely sheltered from all winds.

What other advantages are afforded by the position of Auckland?

An easy and cheap communication by water to the richest agricultural districts in the whole island; such as the great valley of the Thames, the plains of Manurua, the extensive country on the Waipu, and the Waikato, together with the Kaipara, Wangari and various other settlements to the northward.

Who are the owners of the land in this part of New Zealand?

Three different parties—1st, the original inhabitants holding still the larger portion—2nd, the British Government, which has always for sale certain allotments at the price of £1 per acre—3rd, Europeans, who have purchased land from the natives before the British Government claimed the sovereignty of New Zealand.

Has coal been found in New Zealand?

Yes.

Of what quality?

Of excellent quality for steam vessels.

What minerals have been found in New Zealand?

Copper ore, also lead ore.



## CHAPTER X.

## OF THE INDIAN OCEAN.

What is the name of the sea to the westward of Australia ?

The Indian Ocean.

What are its general limits ?

It is bounded on the north by the countries of Asia ; is divided from the Pacific on the east by the Indian Archipelago and Australia ; and from the Atlantic on the west by Africa, while its northern limit is generally understood to be formed by a line drawn from the Cape of Good Hope to Bass' Straits.

What are its principal seas, gulfs or bays ?

The Red Sea, between Arabia and Africa ; the Persian Gulf, between Persia and Arabia ; the sea of Oman, or the Arabian Sea, between Arabia and Hindostan, and the Bay of Bengal, inclosing the Andaman and Nicobar group of islands.

Name the two peninsulas projecting from Asia into the Indian Ocean.

Those of Arabia and Hindostan.

Name the two straits at each side of Arabia.

The Strait of Ormus, between the Persian Gulf and the Indian Ocean ; and the Strait of Babelmandel, between the Red Sea and the Indian Ocean.

What is the largest island in the Indian Ocean ?

The Island of Madagascar, which, with the isles of Bourbon and Mauritius, comprises the principal African Islands.

Name the channel between Madagascar and Africa.

The Mozambique Channel.

What islands lie in that channel ?

The Comoro Islands, four in number.

What is the name of the principal island ?

Johanna, in the middle of the channel.

What distinguishes it from the others ?

It has the best anchorage, and is also the residence of the Sultan or ruler of the islands.

Has coal been found in these islands ?

Yes.

Name the small group of islands eight or ten degrees north of Madagascar.

The Seychelles.

What are they remarkable for?

The production of a palm not known in any other part of the world, and which bears the double cocoa-nuts.

Name the large island off the coast of Coromandel.

The island of Ceylon.

Name the most eastern cape of Africa.

Cape Guardafui.

Name the island off that cape.

The island of Socotra.

What harbours has that island?

Two, one for the north-east, and another for the south-west monsoon.

## CHAPTER XI.

### CURRENTS OF THE INDIAN OCEAN.

What are the chief currents in the Indian Ocean?

In this Ocean we again recognize the great equatorial stream, which we have traced from its origin in the Antarctic Drift Current northwards, along the shores of South America, and westwards through the great ocean, where it occupies the entire space between the tropics, to the Phillipine Islands, where its westerly progress is interrupted by the shores of China, the south-eastern peninsula, and the numerous groups of islands which obstruct its progress.

Where does that current appear in the Indian Ocean?

Flowing in a westerly direction between the parallels of  $10^{\circ}$  and  $25^{\circ}$  S., till in about the meridian of the Island of Rodriguez, it turns to the north-west, and passing the northern end of Madagascar, it enters the Mozambique Channel, where, flowing along the eastern coast of Africa, it forms the Cape Current, which enters the Atlantic Ocean, and joining the northern branch of the main Equatorial Current, forms the origin of the *Gulf Stream*; while the southern waters of the Atlan-

tic flowing round the southern extremity of South America, enter the Pacific Ocean, in order to commence anew the circuit of the globe.

What is the general course of these remarkable currents when uninterrupted?

Uniformly from east to west, in a direction contrary to that of the diurnal motion of the globe.

What is the effect of the numerous obstructions presented by the land?

That it is so deflected, as frequently to run in an opposite direction, causing the various whirls and counter-currents so perplexing to navigators.

How are the effects these currents produce on the climate of the coasts and islands in their vicinity, known?

By comparing the difference of temperature in the ocean, at different parts of its surface; thus in the middle of the tropical regions, at certain seasons of the year, the water of the Equatorial Current in the Pacific Ocean, is under  $60^{\circ}$ , while the still water beyond its limits is upwards of  $80^{\circ}$ . The waters of the Gulf Stream, on the contrary, in different places, are from  $9^{\circ}$  to  $10^{\circ}$  higher than those of the surrounding ocean.

What is the rate of the Equatorial Current of the Indian Ocean?

It flows from east to west, at a rate varying with the different seasons. To the northward of the Island of Madagascar its rate of progress is averaged at from forty-five to sixty miles in twenty-four hours.

What is the Mozambique Current?

A south-westerly current, observed to flow along the African coast towards the channel of the Mozambique, during the whole year.

At what time of the year is this current strongest?

It is strongest during the prevalence of the south-east monsoon, and proportionably weak during the opposite, or north-east monsoon.

At what part of the coast is this current most rapid?

At Cape Corrientes, as its name implies.

What is its velocity there?

The mean velocity varies from eighteen to twenty-eight miles in twenty-four hours, but this rate is greatly exceeded in particular circumstances.

What was the extraordinary rate in the case of the ship Northampton quoted by Horsburgh?

139 miles in twenty-four hours, or five miles and a-half per hour, a velocity which finds a parallel only in the maximum of the Gulf Stream.

What currents prevail in the Bay of Bengal?

They entirely depend on the monsoons.

What is the current through the Straits of Malacca?

Between the Nicobar Isles, and Junk—Ceylon, the current sets strong to the north-west and north, during the north-east monsoon.

What is the Cape Counter Current?

An easterly current from the south Atlantic, carrying the waters repulsed by the bank of Agulhas back into the Indian Ocean in high latitudes.

What is its velocity?

Its mean velocity off the Cape is about fifty miles per day.

How far has this current been observed to the eastward?

According to Major Rennell, as far as longitude  $65^{\circ} 15' \text{ E.}$

What current has been observed off the south-west coast of Australia?

According to Flinders, the current divides near Cape Leeuwin into two streams, one of which flows north and the other east, along the coast of Australia.

What is the maximum temperature of the Indian Ocean?

$87^{\circ} 40'$ , in lat.  $9^{\circ} 55' \text{ N.}$ , and long.  $59^{\circ} 52' \text{ E.}$

What is the maximum temperature of the Pacific?

$88^{\circ} 52'$ , in lat.  $0^{\circ} 0'$ ; long.  $135^{\circ}$ , E.

What is the maximum temperature of the Atlantic?

$88^{\circ} 52'$ , in lat.  $28^{\circ} \text{ N.}$ ; long  $88^{\circ} \text{ W.}$

What is the mean temperature of the atmosphere at the equator of heat?

$82^{\circ} 4'$ .

Making a difference in favour of the heat of the ocean of  $6^{\circ} 11'$ .

## CHAPTER XII.

## WINDS &amp;c., OF THE INDIAN OCEAN.

What is the prevailing wind of the Indian Ocean ?

The south-east trade wind.

Where does this wind blow most powerfully ?

Between the parallels of  $10^{\circ}$  and  $28^{\circ}$  S.

In what part of the year does the south-east trade wind blow with the greatest steadiness ?

From April to October.

What is its character after October ?

Its force and regularity gradually decreases, as the solar heat increases, until it ceases in the vicinity of the equator ; its northern limit in the hot season being  $10^{\circ}$  or  $12^{\circ}$  S., at which time the southern limit extends to  $29^{\circ}$  or even  $30^{\circ}$  S.

What winds prevail to the southward of the zone of the south-east trade wind ?

The north-west winds, which prevail nearly in the same latitudes in the Atlantic and Pacific Oceans.

What are the monsoons ?

Winds which blow six months in the year in one direction, and, during the other six months, in an opposite one.

When does the change occur ?

About the 15th April and 15th October.

Where is the region of the monsoons ?

In the northern part of the Indian Ocean.

What are the limits of the monsoons ?

They prevail over a tract extending from latitude  $7^{\circ}$  or  $8^{\circ}$  south of the equator, to the countries of Asia on the north ; and from the channel of Mozambique and the Red Sea on the west, to the shores of Australia and the China Sea on the east.

How do the monsoons blow on the north side of the equator ?

The north-east monsoon prevails with little variation, from October to April ; while from April to October the south-west monsoon prevails in the same region.

How do the monsoons blow on the south side of the equator?

The north-west monsoon prevails in the south at the same time as the north-east blows on the north, and the south-west monsoon of the north becomes the south-east monsoon of the south of the line.

What variation is observed in these winds during the hot season?

When the south-east trade wind recedes to the southward, the space between the line and  $18^{\circ}$  or  $12^{\circ}$  south, is occupied by the north-west monsoon, which then attains its southernmost limit.

Is any part of the coast of Australia within the limit of the east and west monsoon?

Yes, that part from Cape York to Cape Van Diemen, and extending as far to the south as the parallel of  $12^{\circ}$  south latitude, may be said to be within the limit, at a short distance from the coast.

What has been observed near the land there?

That the easterly monsoon sets in between the 1st and middle of April, and the westerly monsoon in October, and sometimes not until November.

When did the westerly monsoon set in at Port Essington in 1833?

In the first week of November.

What has been observed of monsoons in the Pacific?

That the westerly monsoon extends to the eastward as far as the island of Otaheite.

Where do hurricanes prevail in the Indian Ocean?

They are confined generally, to the region extending from latitude  $9^{\circ}$  or  $10^{\circ}$  to  $30^{\circ}$  or  $35^{\circ}$  south, and from eastward of Madagascar on the west, to the south side of the Island of Timor on the east.

What has been observed of the most authentic storms occurring within these limits?

That they travel with remarkable uniformity from the north-east, in a direction south-west and south towards the east again.

What are Tyfoons?

The hurricanes which prevail on the coasts of China.

*Describe the region of the Tyfoons?*

Tyfoons extend from the coasts of China, to the east of the Island of Luçon, seldom further north than the islands of Japan, nor further to the south than latitude  $14^{\circ}$  north, and blowing with the greatest violence in the vicinity of the land.

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## CHAPTER XIII.

### ROUTE OF VESSELS THROUGH THE INDIAN OCEAN.

What is the most direct route for vessels bound from Europe to India, after doubling the Cape of Good Hope?

The most direct, called the *Inner Passage*, is through the Mozambique Channel, between Madagascar and the coast of Africa.

At what season is this route followed?

When the voyager leaves the Cape of Good Hope at such a season of the year, as may lead him to calculate on arriving at the Coast of India, during the prevalence of the south-west monsoon.

When is this passage safest?

During the dry season, or from April to September.

In how many days did Krusenstern perform this voyage?

In forty days from the Cape to Madras Roads.

Why do some prefer the passage to the eastward of Madagascar?

Because of the dangers of the channel of Mozambique, which are now better known, however; and the eastern passage being the longest, it is not used so much as formerly.

What is the Boscawen Passage?

This track is to the northward of the Mauritius and west of Malha Bank.

What vessels follow this track?

Ships bound for Bombay, or the Malabar coast, when late in the season, and unable to arrive there before the *setting in of the north-east monsoon*.

When is this and the middle passage considered most advantageous?

For ships which do not pass the Cape before the 1st September.

What is the direction of the *middle passage*?

The middle passage is to the eastward of the former, having the Madagascar Archipelago to the west, and the Chagos Isles to the east.

What are the *outer passages*?

Those to the eastward of the Chagos Isles.

When is the most easterly of these taken?

When ships are expected to arrive at Madras, or in the Bay of Bengal, during the full force of the north-east monsoon.

What is the course then?

From the Cape, the course is so far to the eastward, that the south-east trade wind is sought to be met with first in longitude  $80^{\circ}$  or  $85^{\circ}$  east, it is then necessary to steer nearly due north, until the ship nears Cape Acheen, the northern point of Sumatra.

Do such vessels make Cape Acheen?

No, they avoid coming in sight of it, because of the light north-west and westerly winds prevailing there, and besides, a strong current which sets into the Strait of Malacca.

What course is taken by vessels bound for the Coast of Coromandel?

They do not approach so near to Cape Acheen; it is sufficient to make the longitude of  $90^{\circ}$  east, whence the course may be taken to Madras.

What renders the sailing from one part of India to another difficult?

The prevalence of the monsoons; a voyage from Calcutta to Madras, or from Madras to Bombay, may be made in a short time during the north-east, but not so during the south-west monsoon.

Are the routes of sailing vessels very circuitous, as compared with the tracks of steamers along the coasts?

Yes.

What is proved by that fact?



The great importance of steam navigation in the Indian Ocean.

What is considered the best course for ships to pass the Cape of Good Hope in, when they have no occasion to touch there?

To pass it in about latitude  $37^{\circ}$  or  $38^{\circ}$  south, in order to avoid the strong westerly current of the Cape, and to take advantage of the easterly counter-current.

What is the course further eastward?

From the meridian of the Cape to that of the Islands of Amsterdam and St Paul's, the easterly course is usually run between the parallels of  $36^{\circ}$  and  $40^{\circ}$  south.

Why has the parallel of  $37^{\circ}$  been preferred latterly?

Because it is believed that there the winds are more steady, than they are in higher latitudes.

At what time of the year should a ship be on the meridian of these islands, to insure the direct passage to China?

Not later than the 1st July, so as to arrive in August.

From the Strait of Sunda what is the course?

North, through the Strait of Banca or Gaspar into the China Sea.

At what meridian do ships so bound for China, cross the equator?

In the meridian of  $105^{\circ} 30'$  or  $105^{\circ} 40'$  E.

What are the times of the monsoons in the China Sea?

From May till October the south-west, and from October till May, the north-east monsoon prevails.

What is the true direction of these winds in the China Sea?

If on the north side of the equator, the north-east monsoon prevails, on the south it is west north-west and west; and, if the monsoon in the north is south-west, in the south it is east-south-east and east.

What are these winds therefore called south of the equator?

East and west monsoons.

## CHAPTER XIV.

## CURRENTS IN THE CHINESE SEAS.

What is the direction of the currents in these Seas?

The currents in general follow the same direction as the winds.

When both are thus against the navigator, how does he proceed?

By seeking outside the China Sea, more favorable winds and currents.

Are these subject to half-yearly changes of wind?

Each month renders the adoption of a different course necessary.

What has happened to vessels from the want of an exact knowledge of the winds and currents in the Chinese and neighbouring seas?

That ships remaining too long in Batavia have lost a whole year before they could get to China.

When is the inner passage (west of the Paracels) the most expeditious route?

In March, April, and May, from Banca or Singapore Strait.

In June, when the south-west monsoon sets in, what is the route?

The track by the Macclesfield Bank.

When a ship arrives later than September at Pulo Sapato, what is her course?

She is obliged by strong southerly currents and northerly winds which then prevail, to stretch away to the eastward, where changeable winds, often from the south-east, are met with off the coast of Luzon in October.

What is the eastern route to China during the north-east monsoon?

The best course for vessels bound for China direct, when they leave the meridian of Amsterdam Island between the middle of September and December, is to steer along the west coast of Australia: pass through some of the Straits east of Java, and into the Pacific Ocean by Macassar Strait, the Molucca Passage, or *Dampier Strait*, thence to the west of the Pelew Islands, *and into the China Sea by the Strait of Formosa.*

Which of these tracks is preferred by Horsburgh?

The latter, passing to the west of Bouroo and into the Pacific by Dampier's Strait.

What is considered the best course in the latter part of January or February?

The best course from Amsterdam Island is, not to enter the Pacific, but, passing through Macassar Strait, to steer along the west side of Mindanão and Luzon.

What is the Great Eastern Passage for ships bound from Europe to China during the north-east monsoon?

To proceed due east from the Cape of Good Hope to Australia, when ships are late in the season.

Do they pass through Bass' Straits?

Some give the preference to the route round Van Dieman's Land, and thence, as already described, in the route towards the New Hebrides in the Pacific.

How long is the voyage from the Lands End to Canton, passing east of the New Hebrides?

Two hundred days.

Why is the passage round Van Dieman's Land, preferred for the Great Eastern Passage?

Because northerly winds, and southerly currents are frequently met with at the entrance to Bass' Strait.

## CHAPTER XV.

### RETURN ROUTE FROM CHINA AND INDIA TO EUROPE.

What is the course for vessels returning from China and India to Europe?

The great object on this course, is to get as quickly as possible into the region of the south-east trade-wind, by the aid of which the voyage to the westward is speedily accomplished.

In what latitude is that wind generally most steady?

In latitude  $14^{\circ}$  or  $15^{\circ}$  south.

Where does it blow most powerfully?

In the parallels of  $18^{\circ}$  or  $20^{\circ}$  south.

In what months is it apt to fail near the tropics?

In March and April.

In returning to the Cape from Bengal or the Strait of Malacca, in what longitude should a vessel cut the equator?

In about  $89^{\circ}$  east, and steer to the eastward of Rodriguez.

From Madras, Ceylon and the Malabar Coast?

The course is by the eastern or outer passage, cutting the equator to the eastward of  $83^{\circ}$  or  $84^{\circ}$  east, and making for Rodriguez, and the neighbouring islands.

What is the best course, during the north-east monsoon, for ships from the west coast of India, the Persian Gulf and the Red Sea?

By the inner passage, through the Channel of Mozambique.

When are southerly winds met with there, causing delay and danger?

When vessels are either very early, or very late in the season.

Why are hurricanes generally met with only on the return voyage?

Because the "highway" for sailing vessels, from the Eastern Sea to Europe, lies through the centre of the hurricane district.

Is the line of Steam navigation from England, *via* Singapore to Australia, entirely clear of the regions subject to hurricanes and tyfoons?

Yes.

## CHAPTER XVI.

### OF THE ATLANTIC OCEAN.

What Ocean lies beyond the Indian or Pacific Oceans (looking west or east from Australia)?

The Atlantic.

What is its position?

The Atlantic Ocean occupies the great longitudinal valley between the western coasts of Europe and Africa, and the eastern shores of America, bounded on the *north* by the Arctic Circle, and divided by the Pacific

Ocean, by lines drawn from Cape Horn and Cape Agulhas, to the Antarctic Circle.

What knowledge is necessary to a full understanding of sea-tracks through the Atlantic?

A knowledge of the various conditions of the wind, and, next to these, the ocean-currents are the most important elements in navigation.

What proves the necessity for careful observation of the nature of winds and currents?

The facts that, in the year 1825, eight hundred sail of British shipping were lost at sea, and that upon an average, one American, and two British ships are wrecked every day all the year round.

How many miles a day can a sailing ship accomplish in fair winds?

Two hundred miles, or more with very favourable winds.

What was the average rate of sailing among the ancients?

Thirty five miles a day, (See Rennell, Geog. of Herodotus).

What is the chief current of the Atlantic?

The Southern Atlantic current, a continuation of the Mozambique current, which doubles the Cape of Good Hope, round the bank of Agulhas, and enters the Atlantic Ocean as the Cape or Agulhas current.

What is its course thence?

It flows in a north-easterly direction along the western coast of Africa to the parallel of St. Helena, whence its course is more easterly, till it is turned to the westward by the form of the coast, and the opposition of the *Guinea Current* from the north.

What is the course of this current under the line?

It is there called the Equatorial Current, and stretches across the Atlantic on both sides of the equator, till it has reached the middle point between Africa and South America, where it sends off several branches, one into the Gulf of Mexico, whence the *Gulf Stream* passes along the coast of North America, and across to the Azores where it turns south, mixes with the *Guinea Current* again, and thus maintains a perpetual circulation.

What is the Cape Horn Current?

This current flows from the Pacific Ocean round the southern extremity of America, towards the north-east, and is supposed to communicate with the southern connecting current.

What is the usual time of a voyage from the English Channel to the Cape?

Seventy days.

What is the course on leaving the British Channel?

Usually to the south-south-west, the first point to be reached being the Canary Isles in the vicinity of which, the north-east passage winds usually commence.

What are the prevailing winds between these points?

They are either west, or west by south, or north, and north-east, seldom blowing from any other point.

What is the best longitude for crossing the equator?

Between the meridians of  $18^{\circ}$  and  $23^{\circ}$  west.

What is the course on arriving in the region of the south-east trade-wind?

By sailing as close to it as its direction will permit, which course is usually south-west by south.

Where does this bring the voyager?

Off the coast of Brazil, about the parallel of Cape San Agustin, whence the coast can be navigated in any direction.

What is the course of vessels bound to the Cape of Good Hope and India, or Australia?

From the equator, they steer for the Rocky Island of Trinidad, and passing it on the west, they sail with easterly winds and easterly currents towards the south point of Africa, so as to cut the parallel of  $30^{\circ}$  south somewhere about longitude  $20^{\circ}$  west.

What is the course of vessels sailing from the Cape of Good Hope to England?

They sail with the south-east trade-wind to the Island of St. Helena, and crossing the line at about  $20^{\circ}$  west of Greenwich, steer for the Azores, which are passed on the west side; northwards from the Azores, the vessel *falls into the great tracks from the West Indies to Europe.*

*What was the commencement of a novel and expe-*

ditions mode of intercourse between England and the United States ?

The arrival of the Great Western Steam Packet at New York, on the 23rd April, 1838, having left Bristol in England, on the 8th of the same month.

What is the direction of the "Overland Mail Route," as it is called, to India ?

From London to Marseilles, and Malta to Bombay, the distance being 5378 nautical miles.

What is the average number of days this takes ?

Thirty-four.

What is the distance from Southampton to Bombay ? 6254 nautical miles.

What is the average time ?

The average time in which the voyage is made, is from two to eight days longer than by the mail route.

What is the mail route by steamers from Southampton to Calcutta ?

By Aden, Point de Galle (in Ceylon), and Madras.

What is the distance to Calcutta ?

8024 nautical miles.

What is the average number of days ?

Forty-two and a-half.

What is the mail route, (by steamers) from Southampton to Hong Kong ?

By Point de Galle, Pulo Penang, and Singapore.

What is the distance ?

9774 nautical miles.

In what time is the voyage accomplished ?

In, from 50 to 60 days.

What is the distance from Calcutta to Singapore ?

1440 nautical miles.

What time is required for the voyage ?

Fifteen days.

What is the distance from Singapore to Batavia ?

480 nautical miles.

## CHAPTER XVII.

## COASTS OF THE PACIFIC—CHILI.

Name the provinces of South America on the Eastern shore of the Pacific?

Patagonia, Chili, Peru and Colombia.

What is the principal port of Chili?

Valparaiso, which is the port of Santiago the Capital.

How far is Santiago inland?

105 miles of direct distance.

What is the distance from Santiago to the main ridge of the Andes?

Fifty miles.

How is it watered?

Water is distributed by conduits through the streets, into its numerous gardens.

What inland commerce is carried on by Santiago?

Between this city and Buenos Ayres, an extensive commerce is carried on, the distance being 1062 miles.

Is the road difficult across the Andes?

For about 40 leagues the road passes through snows, amid the precipices of the Andes; yet it is found safer and cheaper to send goods by this road, than by the circuitous passage round Cape Horn.

What is the most southern port of Chili?

Concepcion.

What is the most northern?

Coquimbo.

What district of Chili is most productive?

The country around Concepcion; the southern port.

For what sort of productions is it favorable?

For wheat, barley, maize, pulse, and all kinds of vegetables; also a sweet wine said to equal Frontignac, and considered the best made in America, for which the demand at Lima was almost unlimited. Jerked beef is also exported, and hides, wool, and other minor articles.

What is the name of the port of Concepcion?

*Talcahuano*, on a large bay, with good and secure anchorage.

*Of what do they make Chili vinegar?*



Chili vinegar is made from a grape peculiar to the country.

What is the character of the horses?

They are small, but, for their form, temper and spirit, they are preferred to the horses of Buenos Ayres.

What kind of oxen and mules have they in Chili?

The horses and mules are equal to any in the world.

What are the articles of productive industry?

Ponchos, hats, shoes, coarse shifts, coarse earthenwares and jars of fine clay.

For what branch of industry has Chili been most celebrated?

For mining.

Where do the minerals chiefly occur?

In the interior from Coquimbo, a barren tract in the northern part of the country.

What metals are wrought?

Lead, tin, copper, silver and gold.

What is the most abundant?

Copper.

Where is copper chiefly exported to?

To the East Indies and China.

What semi-metals are found in Chili?

Arsenic, cobalt, bismuth, zinc, antimony, and quick-silver, both virgin and cinnabar.

Where has coal been found?

A very fine seam has been found near Concepcion, whence it has already been shipped to other parts of Chili, and even to Peru.

What islands are attached to Chili?

The large islands of Chiloe with others surrounding it; and the Island of Juan Fernandez.

## CHAPTER XVIII.

### PERU.

What is the capital of Peru?

The city of Lima.

What is the name of its port?

Callão, *six miles distant*.

What is the height of the range of the Andes where it traverses Peru ?

The peaks of Sorata and Illimanni : the first being 25,400 feet, the latter 29,350 feet, above the level of the sea.

Where is cinnabar or sulphuret of mercury found ?

In Guanica—Velica, at no great distance south-west of Lima.

What is the character of the coast country of Peru ?

The plain along the sea-coast is a sandy desert, but it was formerly well irrigated by canals made by the ancient Peruvians.

What grain is chiefly produced ?

Maize : for wheat, the province is dependent on Chili.

Are vines cultivated ?

The neighbourhood of Piseo is covered with vines, from which brandy is chiefly made.

What vegetable productions are exported ?

Ipecacuanha, balsams, medicinal plants, and valuable dye-woods.

Whence do the Peruvians obtain all their finer manufactures ?

From Europe.

What has constituted the unrivalled wealth of Peru ?

The mines.

Where are they situated ?

They are seated in the inmost depths of the Andes, and in mountains which reach the limits of perpetual snow.

Where is the silver mountain of Potosi ?

In Bolivia, or upper Peru.

What is its height and extent ?

It rises to the height of 16,000 feet, is eighteen miles in circumference, and forms one entire mass of ore.

Where are the silver mines of Pasco ?

On the knot where the Andes lock into each other, at a height of more than 13,000 feet above the sea.

What is the nature of the ore ?

It is situated in a bed of brown iron-stone, from every ton of which, two or three marks of silver are extracted.

Where are the gold mines ?

Chiefly in the interior district of Tarma, bordering on the Amazon.

How is the metal obtained?

Chiefly by washing the earth containing auriferous particles, but in some instances the gold is found embedded in veins of quartz rock.

## CHAPTER XIX.

### COLOMBIA.

What are the boundaries of Colombia, on the north and south?

Colombia is situated between  $6^{\circ} 15'$  south latitude, and  $12^{\circ} 25'$  N. latitude, being limited on the south by Peru and Portuguese Guiana, and on the north chiefly by the Carribbean Sea to Punta Careta; and thence to point Barica on the Pacific, the line which separates it from Guatemala cutting the central Cordillera in Mount Varu.

Name the chief capes on the coast of the Pacific in Colombia.

Punta Mula, San Francisco and Blanco.

Name the principal bays.

On the Pacific are the bays of Panama, San Miguel, and Guayaquil.

What is the most remarkable feature of this portion of America?

The Isthmus of Panama, or Darien, where the two oceans are separated by this isthmus only forty miles across from Panama.

What sort of harbour has Panama?

Only a bad roadstead, but the place is fortified, the population about 10,000.

Name the harbour on the opposite side of the Isthmus.

Portobello.

What is its character?

Portobello has a noble harbour, but the situation is *very unhealthy*.

What is the chief city of Colombia?

Santa Fé de Bogota.

Where is it situated ?

On a plain of table land, fifty miles by 25, and 8,000 feet above the level of the sea.

What is the latitude and longitude ?

The latitude is  $4^{\circ} 10'$  north, the longitude  $73^{\circ} 50'$  west.

Is the climate hot ?

No, the great elevation gives the climate of Britain.

What are the seasons ?

The only alterations are formed by the wet seasons which are two ; the first comprehending March, April and May ; the second September, October, and November ; and these being colder than the others make two winters and two summers.

What is the character of the surrounding plain ?

It is exceedingly fertile, yielding two crops in the year, of the best European grain.

What are the articles of trade ?

Cotton goods, hides and grain.

What are the chief cities of Colombia ?

Caraccas, Carthagena, Cuenta, Panama, New Valencia, Popayan, Maracaibo, and Merida.

Which of these are situated on the coast of the Pacific ?

Panama only.

What are the productions of the soil of Colombia ?

A vast variety of woods, cedar, black yellow and red ebony, mahogany ; *chicaranda* iron-wood, oak (on the Andes,) and dyeing woods, Brazil wood superior to those of Campeachy. Fruit trees include the *chirimoya* of Popayan, which sometimes weighs 10 or 12lbs. This is the land of the Banana and many other palms ; of the caoutchouc ; of vegetable camphor ; and of wax. The balsam of Tolu, so called from a village near Carthagena, the quinine-tree of Carony, cochineal, varnish called *mopamopa* said to equal the Chinese sarsaparilla, sassafras and liquorice, squills, storax ; cassia, gayac, aloes, quinquina or Jesuits' bark, vanilla, the *quadua* bamboo supplying all the materials for a house, cacao or chocolate tree, indigo, cotton, coffee, sugar, tobacco, maize,

potatoes, plantains, *yucas*, curas, and ignames, the latter a root sometimes weighing 25lbs.

Is there much agriculture amidst all this exuberance of nature?

No; North American flour sold when Humboldt wrote, for from £14 8s. to £20 5s. per barrel; the maintenance of a muleteer cost 4s. 6d. to 6s. 9d. daily, and the price of a cwt. of iron was sometimes £9 sterling.

What was this chiefly owing to?

A population which consumed without producing.

What are the chief causes of such a state of things?

Want of capital, consequent high interest of money, and the number of mortgages with which every estate is burdened.

What are the animal productions of Colombia?

Domestic animals, such as cattle, horses, mules, sheep, goats and hogs, are numerous.

How are the cattle fattened?

Vast numbers are raised where there are mountainous tracts to afford a retreat during the inundations; these are brought down when the land is dry, and fattened on a plant called *gamalotte*, resembling barley in its blade, and which grows in such luxuriance as entirely to cover the plains, even to the height of seven or eight feet.

What is remarked of the domestic animals, as the bull, the cow, the ass, the sheep, &c. which have been imported from Europe and suffered to run wild on the savannahs of Guiana, and the banks of the Oroonoko?

That they greatly degenerate both in size and flesh, in consequence of the perpetual perspiration to which they are exposed, and the coarseness of the grass on which they feed.

What wild animals are found in Colombia?

The jaguar, the puma, and the congar, several species of wild cats, wild boars, deer, and the ant-eater.

Describe these wild animals?

The jaguar, called also the American panther, though not striped like the tiger, but spotted—is the largest and most ferocious. The puma, like the lion, rarely attacks man, and is smaller than his neighbour of Africa. The congar is equally ferocious with the

jaguar, but not so thick and strong. The wild cats are little dangerous. Wild boars and deer are common. The ant-eater is a most extraordinary animal, often weighing from 150 to 200 lbs., and measuring eight feet from the snout, to the tip of the tail.

What is the character of the insects?

Insects are in general extremely numerous at Carthagena and Guayaquil; it is impossible for this reason to keep a candle burning except in a lantern. There is a species of centipede a yard in length, whose bite is mortal, causing death in twenty-four hours. Bats are so numerous at Carthagena, as to cover the streets like clouds, and are extremely troublesome.

What amphibious animals are there?

The cayman, the iguana, the manati, the bison, the lap and the water-dog, are the most remarkable.

Where is the *gymnotus electricus*, or electrical eel, found?

It abounds in the rivers and lakes of Venezuela, but is most frequently found in small stagnant pools dispersed over the immense plains between the Apure and the Oroonoka.

What is known of the mineralogy of Colombia?

The Vice-royalty of New Granada, which includes the Isthmus, has always been celebrated for the abundance of its gold.

What is done with the gold in Antioquia and other districts?

No other money is known there, than uncoined gold.

How is the gold obtained?

Generally from the *lavaderos* or washing plains, in alluvious grounds.

Are there also gold mines?

Yes, the province of Antioquia contains mines of gold in micaceous slate; at Buritoca, San Pedro, and near Aimas, but they are not wrought for want of hands.

Where are the richest deposits in alluvious grounds?

In the valleys of Santa Rosa, de Orsas, and de Trinidad. At Choco, the richest river in gold, is the Rio *Andageda*; which, with the rivers of Quito and Zitara,

forms near the village of Quibdo, the Rio Atrato, or the river of Darien, all the ground between the Andageda, the Rio San Juan, the Rio de Jamana, and the Rio de San Augustin, is auriferous.

What is the weight of the largest piece of gold ever found in Choco?

Twenty-five pounds.

What number of slaves were employed in gathering gold dust in the district of Choco, in 1778?

3,054 persons.

And in the valley of Canca?

8,000 persons.

What other metals are found in Colombia?

Platina is solely produced in Choco and Barbuccas; silver in the Vega de Supia; cinnabar or sulphurated mercury in three different places. There are also mines of copper, tin, and lead.

What precious stones are found in Colombia?

There are mines of emeralds in the district of Muzo, the most celebrated is in the mountain of Itoco, three leagues from Muzo, and fifty English miles north of Santa Fé; diamonds of small size, hyacinths, and fine garnets are also found in the mountains of Antioquia and Guamoro.

In what rock do the emeralds occur?

In a gangart of pure white quartz, there are specimens found in a fine grained schistus.

What other precious stones occur?

Amethysts in Timasco, turquoises in the districts of Pamplona, Suza, and Anserma, very fine marble in Venezuela; also rock-chrysal, with *lapis lazuli*, not much inferior to the celebrated ultramarine.

Where are pearls found?

Excellent pearls are found at Panama and in the Rio Hadra.

Where are the salt works?

At the salt mine of Zichaquira, where the rock-salt glitters like an immense rock of chrysal.

Of what does the commerce of Colombia consist?

In the export of the precious metals, cocoa, cotton, sugar, coffee, in exchange for manufactured goods and European luxuries.

What is the climate of Colombia?

During the rainy season (which is between January and June at Guayaquil) the inundations are so great, that the inhabitants retire with their herds up to the sides of the Andes, and fevers, diarrhœa, dysenteries, vomiting and spasms then prevail, and the mortality is great. From April to December the heats are terrible and destructive, and the black vomit prevails.

Is not the climate much modified by elevation above the sea?

Yes, at Bogota the mean temperature of the table-land is  $60^{\circ} 6'$ , on the plains of the Orinoco the medium is  $78^{\circ} 25'$  while that of the Pacific coast is  $80^{\circ} 11'$ . There are thus three climates, that of the coasts, the interior, and the high table lands.

Is coal found in Colombia?

Coal is a rare production in the Cordilleras, but beds of coal have been found in the valley of Bogota, at places elevated 8,201 feet above the level of the sea.

What limits the trade with Europe?

The heavy expense of freight, in the long voyage, and secondly, the still more tedious land carriage into the interior over bad roads.

What remains have been found in Colombia of better roads?

Those of the famous road made by the Incas of Peru, along the high belt of the Andes, from Cusco to Pasto in Popayan, a distance of more than 1300 English miles.

Describe this road according to Humboldt.

"This causeway, lined with free-stone, may be compared with the finest Roman roads seen in Italy, France, or Spain, being perfectly straight, and keeping the same direction for four or five miles."

What is the character of the Andes-chain where it traverses Colombia?

The Andes form a double chain, north of the sources of the Magdalena and Cauca, over a space of more than 600 miles, the interval being the elevated plain of Quito.



What is the distance between these ranges?

Generally from twenty to twenty-four miles.

What is the breadth of the plain of Quito?

From five to six leagues.

What is its elevation above the sea?

From 9,000 to 10,000 feet.

What is the character of the Andes at the sources of the Magdalena and Cauca?

The range diverges into three parallel ridges, and of these the western chain separates the valley of Cauca from the province of Choco, and the coasts of the Pacific.

What is its elevation?

Its highest elevation is not 5,000 feet, and it falls so low as it stretches northward, that it can scarcely be traced into the department of Panama, where it forms mountainous land only 1200 feet in height.

What country lies between the middle and the eastern chain?

The plain of Santa Fé de Bagota.

What is the name of the mountain where the central and western chains are said to unite?

Santa Martha, which is in lat.  $8^{\circ} 30'$  and visible far at sea.

What is its height?

2850 toises, or 15,056 feet.

What is the highest mountain of this region?

Chimborazo, called the "Giant of the West," which stands yet unscaled by mortal foot.

What is its height, as ascertained by Humboldt?

21,440 feet high.

How far was Humboldt from reaching the summit?

2140 feet.

In which of the two chains to the southward of Magdalena are the principal Volcanic summits?

In the most elevated or western side facing the expanse of the Pacific.

Where is the Volcano of Cotopaxi?

About six or seven leagues from Quito.

What is its height above the sea?

18,898 feet, a greater elevation than Vesuvius would be, if placed on the top of Teneriffe.

What rivers afford the means of communication between the province of Quito and the Pacific Ocean?

The rivers Esmeraldas and Guayaquil.

What is the political character of Colombia?

The spirit of independence is said to have broken out earlier, and with greater force in Colombia, than in any other of the vast regions of South America.

Name the mountain overlooking the City of Quito, particularly chosen by the French Academicians for the operations by which they determined the figure of the earth.

Pichincha, considered therefore, by Humboldt, the classic land of modern astronomy.

## CHAPTER XX.

### GUATEMALA.

What is the extent of Guatemala?

Guatemala forms a sort of extended isthmus reaching from north-west to south-east, between  $8^{\circ}$  and  $17^{\circ}$  N. lat. and  $80^{\circ}$  and  $96^{\circ}$  of W. longitude.

Describe its general outline.

Guatemala is bounded on the south-east by the province of Veragua; now belonging to the republic of Colombia, on the north and north-east by the provinces of Chiafra, Tabasco, Yucatan, and the Atlantic, or the sea of the Antilles, and on the south and south-west by the Pacific Ocean.

Name the streams which flow to the Pacific.

The Higueron, the Realejo, the Fonseca, and the San Miguel.

Is Guatemala well watered?

It is considered one of the best watered countries between the tropics.

Name the capital of Guatemala.

Guatemala la-Nueva, or New Guatemala, in lat.  $14^{\circ} 20'$  N. on the banks of the Rio de las Vacas.

What is its elevation above the level of the Pacific?

About 5000 feet.

What was the population in 1825 ?

30,775 souls.

Describe the coast of Guatemala on the Pacific.

The most northern portion forms with that of Mexico the gulf of Tehuantepec : next, on the south, is the port of Guatemala, Cape Remedios and the gulf of Fonseca which embraces a number of little islands. The gulfs of Papagayo and Nicoya or Salinas bound the peninsula which terminates to the south-east in Cape Blanco, and the gulf of Dolce opens towards the Colombian Coast.

What are the principal mountains of Guatemala ?

A prolongation of the Cordillera of the Andes, enters by the south-east frontier and traverses the whole of this region, contracting and expanding its branches according to the width of the country.

What volcanoes occur in the territory of Guatemala ?

The group of Guatemala is remarkable for containing, with the exception of the Island of Java, the greatest number of volcanoes known to exist on a given space any where on the surface of the globe.

The main chain is jagged with volcanic cones, of which thirty-five have been enumerated : this runs along the western coast from the lake of Nicaragua towards the bay of Tehuantepec.

Name the most southern of these volcanoes.

Barua or Varu in the particular line between Guatemala and Colombia.

What volcanoes are near the lake of Nicaragua ?

There are three volcanoes in a state of activity on the southern shore, and to the north of that lake, several others exist, of which the most active is that of Malaya.

What is the most northern of the Guatemala series of volcanoes ?

Soconusco in lat.  $15^{\circ} 59' N$ .

Where is the volcano de Aquā, or volcano of water ?

Near the old city of Santiago de Guatemala.

Why was that city abandoned for New Guatemala ?

An aqueous eruption which burst forth in 1540 overwhelmed the whole city, and buried in its ruins a great part of the inhabitants, and although partly re-

built afterwards, a violent earthquake, which took place in 1775, induced the greater part of the inhabitants to remove to Guatemala la-Nueva.

What is the height of the volcano of water ?

10,000 feet.

What is the circumference around its base ?

Eighteen leagues.

What is the form of the summit ?

There is a concave space, resembling a crater, measuring about 140 yards by 120.

What is to be seen from it ?

According to Juarros, the view on the north and south is bounded by the two oceans.

What are the principal lakes of this region ?

The lake of Nicaragua is 186 miles in length, 76 miles in breadth, and 465 miles in circuit. Its greatest depth is forty fathoms, its least thirty feet. Its waters are not brackish, and its surface is adorned with picturesque islands.

What waters fall into it ?

The waters of Lake Leon by the river Lipitapa.

What is the outlet of Lake Nicaragua ?

The river San Juan, which flows from it into the Atlantic.

What is the extent of Lake Leon ?

Lake Leon, or Managua, is forty-eight miles long, by twenty-three broad, and said to be deep enough to receive the largest vessels.

What is the extent of Lake Atitan ?

It is eight leagues in length, and more than four in breadth.

What is the character of Lake Atitan ?

It is entirely surrounded with mountains and rocks of irregular form. From its margin there is no gradation of depth, but the banks are precipitous, and the bottom has not been found with a line of 300 fathoms.

Do any rivers fall into it ?

Yes, several, and it receives all the waters that descend from the surrounding mountains, but there is no perceptible channel by which this great influx is

carried off: the water is fresh, and so cold, that it benumbs and swells the limbs of those who attempt to swim in it.

What fish are caught in it?

The only fish caught in it are crabs; and a small fish, about the size of the little finger, is caught in such abundance that the inhabitants of the ten surrounding villages carry on a considerable fishery for them.

What is the climate of Guatemala?

The eastern coasts are said to be most healthy: on the shores of the Pacific the heat is often extreme, and Europeans are frequently attacked with intermittent fevers.

What is the character of the soil?

On the coast we frequently meet with a considerable extent of marshy ground, in the interior a volcanic soil abounds, which like all soils of this description, is remarkably fertile.

What are the chief productions?

The succession of the fruits and produce of all kinds, is uninterrupted throughout the year.

In what province was the cocoa for the especial use of the court of Madrid formerly gathered?

In the province of Soconusco.

What are the two productions of this province best known to commerce?

Indigo and cochineal.

What two animals are peculiar to this part of the American continent?

A small species of fox called the zorillo, and the quetzal, a large bird of a beautiful green plumage, whose tail feathers are favourite ornaments, with the natives.

What other animals are known in Guatemala?

The *raxon* is a very beautiful party-coloured bird. The rivers and lakes swarm with fish, and the coasts also afford a variety of pursuit to the fishermen, including green turtle and manatees.

What are manatees?

This singular creature has been considered the connecting link between quadrupeds and fishes; it retains

the fore feet, or rather hands of the former, with the tail of the latter, spreading out in a horizontal direction like a large fan; beneath the skin there is a deep layer of very sweet fat; the meat is streaked throughout with alternate layers of fat and lean, being most excellent food.

It feeds on large shoots of tender grass growing on the banks of rivers, and will rise nearly two thirds of its length out of the water to reach its food, and immerses itself in the water on the slightest noise; the male and female are generally together; their common length is from eight to twelve feet, and they weigh from 500 to 800 lbs.—some of them are however larger, weighing from 12 even to 15 cwt.

What are the chief noxious animals and reptiles?

Not the least formidable are the warrior ants (*hormigas guerreras*) who are double the size of the common ant, and always move in regular array, like an army. Wherever they enter a house they spread all over it, and clear it so as not to leave a single worm, reptile, or vermin of any sort behind them when they depart. To the larger creatures such as snakes, scorpions, toads, rats, &c., they are formidable from their numbers; and in attacking them, they adhere so closely to their bodies, that they soon kill them, and devour them to the bones.

What is the distance from the city of New Guatemala to Mexico?

680 miles.

What are the other principal ports in the Pacific? Realego, Desolada, San Juan del Sur, and Brito.

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## CHAPTER XXI.

### MEXICO.

What is the condition of Mexico?

Mexico was originally a native empire, afterwards the principal of the Spanish vice-royalties, and is now a great independent republic.

Describe the outline and extent of Mexico.

The Republic of Mexico extends from the 16th to the 40th parallel of northern latitude; its boundary on the

north-east is understood to commence at the mouth of the Sabine river. Savannahs, resembling the deserts of Tartary, separate the back settlements from the territory of the United States, and on the north the boundary was the Platte River to Cape Mendocino, but the cession of the California territory to the United States has reduced the limits on that side. On the west and south the boundaries are the Pacific and a line drawn from the port of Tehuantepec to the Bay of Honduras.

What is the breadth of Mexico?

It is very irregular, the greatest inland breadth is in  $33^{\circ}$  north lat., extending from  $94^{\circ}$  east long. to  $118^{\circ}$  west, or 1400 British miles.

Has the interior of Mexico been thoroughly explored?

No, it is but imperfectly known.

What is the extent of the high table land?

It is known from the 16th to the 26th degree of north latitude, but how far to the north of  $26^{\circ}$  north latitude this table-land extends is not yet known.

What is the breadth of this table land in  $19^{\circ}$  north latitude, the parallel of the city of Mexico?

The breadth of this high level is sixty leagues, or 210 miles, between the opposite points of Guichilague and Las Vigas.

What is the height of these points above the sea?

The former is 8,000—the latter 7,814 feet above the sea level.

What is the lowest place in the intervening tract?

The city of Puebla de los Angeles, which is 7,198 feet above the ocean level.

What is the breadth of the Mexican table-land in the parallel of  $26^{\circ}$ ?

Four hundred miles.

What obstructs the communication between that fine interior country and the sea coasts on the east and west?

The great declivity and bad roads.

What are the most elevated summits of the table-land of Mexico?

The Popoca-tepetl (or "mountain of smoke") a volcano covered with perpetual snow—its elevation being

17,735 feet above the level of the sea—and the Citlal-tepetl or “star mountain,” on the eastern declivity of the table-land rises to a height of 17,876 feet.

What name is given to the great mountain chain where it traverses Mexico?

The Rocky Mountains.

What is remarkable in these, as compared with the South American Andes?

That they recede much further from the shore of the Pacific.

Name the territory where these summits are most distant from the coast of the Pacific.

New California.

What range occurs there between the main range or *Sierra Madre* and the coast?

The Sea Alps or Californian mountains, which commence near the south-east point of the Peninsula of that name, and run north-west through the middle of the Peninsula, and along the coast of the Pacific as far as the mouth of the Colombia; an extent of more than 1500 miles.

What is the elevation of this chain?

Its highest part, the Cerro de Gigante, or “Hill of the Giant,” does not exceed 4920 feet in perpendicular height.

What is the prevailing geological feature of this mountain system?

Porphyritic Rock.

What distinguishes the porphyry of the central plateau from the European porphyry?

The constant presence of hornblende and the absence of quartz.

Where does granite appear?

At Acapulca and in Oaxaca.

Name the capes along the Pacific coast.

*Cape St. Lucas*, the south-east point of the peninsula of California. *Cape Corrientes* the most western point of the Isthmus of Mexico, and *Cape Mendocino* already mentioned.

Name the chief bays or gulfs.

*Tehuantepec*, and the large inland gulf of California.



What is the extent of the gulf of California?

It extends 880 miles from south-east to north-west, or from the mouth of El Rosario river to that of the Rio Colorado. The entrance is 200 miles across, the average breadth from 120 to 150 miles.

What are the other bays on the Southern Ocean?

Those of *San Blas*, *San Francisco*, and *Acapulco*.

What are the principal rivers in the Mexican territory?

The largest river in the isthmus is the Rio Grande de Santiago, called in its proper course the Rio de Lerma. This river issues from a small lake thirteen miles south-west from the city of Mexico. Rising north-west, it enters the lake of Chipala, and issuing from thence it finally falls into the bay of San Blas. Its course is estimated at 600 miles. The *Rio Colorado* or "red river" falls into the ocean at the head of the Gulf of California, being red from flowing over a soil of red clay. It is capable of being navigated upwards of 300 miles by square rigged vessels. Throughout the whole length of its course, its banks are said to be entirely destitute of timber. The Rio *Buenaventura* flows from its source south-west till it enters a large salt lake, from whence it is supposed to issue, and to hold a western course until it enters the Gulf of San Francisco in  $38^{\circ} 30'$  north latitude, after a course of 600 miles.

Name the lakes in the valley of Mexico.

These are five in number, *Chalco*, *Xochimilco*, *Tezcuco*, *San Christobal*, and *Zampango*.

What is their extent?

The largest is Tezcuco, in the lowest part of the valley, and the whole surface of them together comprise one tenth of the valley, that is to say, 22 square leagues, or  $168\frac{1}{2}$  square miles of water.

Are these waters fresh?

No, they are all more or less salt, Tezcuco the lowest being most so.

What is the climate of Mexico?

The variety of its climate is very great, from the extraordinary nature of its formation, embracing the extremes of equatorial heat and polar cold.

Does the climate accord with the latitudes?

No, it is affected by a variety of causes, and is regulated more by elevation than by latitude.

Where are the warm regions of Mexico?

The port of Acapulco in  $18^{\circ}$  north, and the vallies of Peregrino and Papagallo, are among the hottest and most unhealthy places in the world.

Where are the temperate parts?

On the declivity of the table-land of Mexico, at an elevation of from 4,000 to 5,000 feet, there is a perpetually mild spring-temperature, never varying more than by four or five degrees of Fahrenheit, so that the extremes of heat and cold are equally unknown.

What is that region denominated by the natives?

The *tierras templadas*, or the "temperate regions."

Name the cities thus situated.

The cities of Xalappa, Tasco, and Chilpansingo, are celebrated for their salubrity, and the abundance of fruit trees in their vicinity.

What is the mean elevation to which the clouds ascend from the sea there?

4,264 feet.

What effect has this on the climate of these regions?

That they are often envolved in thick fogs.

Where are the *tierras frias* or "cold regions?"

On the table-land of Anahuac, or elevated plains of Mexico.

What is its extent?

Upwards of 176,000 square miles, within the Tropic of Cancer.

What is the altitude and mean temperature of these plains?

Upwards of 7,217 feet above the sea, the mean temperature is  $62^{\circ}$ , of Fahrenheit, or about equal to that of Rome; that of Sydney being  $64.5^{\circ}$ .

What is the climate of the capital of Mexico.

The winters are usually as mild as at Naples. In the coldest season, the mean heat of the day is from  $55^{\circ}$  to  $60^{\circ}$  Fahrenheit, in summer the thermometer never rises above  $75^{\circ}$  in the shade.

What is the effect of temperature as observed in Mexico?

That the climate, productions, aspect, and even the physiognomy of Mexico, are solely modified by the degree of elevation or depression of the soil.

At what elevation, are sugar, cotton, cacao, and indigo, produced abundantly ?

Only at an elevation of from 1,968 to 2,624 feet.

At what elevation is European wheat produced ?

European wheat occupies a zone on the declivity of the mountains, commencing at 4,624, and ascending to 9,842 feet of elevation.

At what height does the banana cease to bear fruit ?

At above 5,084 feet of elevation.

At what elevation do Mexican oats grow ?

Only at elevations between 2,624 and 9,842 feet of elevation.

What is the climate of New Mexico, which is that portion within the temperate zone ?

Climates differ essentially there. German winters are said to succeed Italian summers ; the air being much colder than in the same latitudes of the United States.

What is the cause ?

New Mexico is a long and not very wide valley—bounded on all sides, except the south, by ranges of snow-capt mountains.

What is the climate of the California Peninsula ?

The climate is mild, the sky constantly serene and cloudless.

What is the nature of the soil ?

It is sandy and badly watered.

What is the character of New California in this respect ?

There the air is obscured by frequent fogs, which invigorate vegetation and fertilize the soil, which is covered with a black and spongy earth, and the climate is much more mild than in the same latitudes on the eastern coast of America.

What is the climate of the elevated interior plains ?

The immense extent of these plains produces a reverberation of the solar rays, so that the heat is found to be much greater in summer than on the Andes of Quito, while the cold is singularly great in winter.

What is the nature of the soil and vegetable productions of Mexico?

It is said that if the soil were watered by more frequent rains, no country cultivated by human industry in the two hemispheres would surpass it, but that however fertile the soil, the want of water diminishes the abundance of the harvests.

What are the principal vegetable productions of Mexico which serve for home consumption?

Among these are the banana, the manioc, maize, European grain, potatoes, oca, the igname, the batates, the cacomito, the tomatl, the chimalatl, rice, and finally all the herbs and fruit-trees of Europe.

What vegetable productions of Mexico furnish raw materials for manufactures and commerce?

These comprehend the following plants, namely, the sugar cane, cotton, flax and hemp, coffee, cocoa, vanilla, sarsaparilla, jalap, tobacco and indigo.

What is the nature and use of the banana in Mexico?

The banana is for all the inhabitants of the tropics, what the cereal gramina, such as wheat, barley, and oats, are for Western Asia and Europe, and what the numerous varieties of rice are for the countries beyond the Indus, especially Bengal and China.

Is the banana equally valuable in the islands of the Pacific?

Wherever the mean heat of the two continents, and the islands dispersed in the immense Pacific, exceeds  $75^{\circ}$  of Fahrenheit, the fruit of the banana becomes one of the most important objects of cultivation for human subsistence.

Are there many varieties?

Under the name *bananas*, a vast number of plants, essentially differing in the form of their fruits, are cultivated in the equinoxial regions, and even as far as  $33^{\circ}$  and  $34^{\circ}$  north latitude.

What kinds are cultivated in Mexico?

Three species, namely, the true platano or *arton*, the *camburi*, and the *dominico*.

What is the size of the *platano arton*?

It sometimes exceeds  $11\frac{1}{4}$  inches, and is often from seven to eight inches long.

Does the cultivation of the bananas require much attention?

No, the suckers once planted, nature does the rest, —in ten or eleven months the fruit comes to maturity; the old stalks must then be cut away with the exception of the leading sprout, which bears fruit about three months after the mother plant; and if the earth about the stem is loosened once or twice in the year, a plantation may be kept in full produce without any further exertion.

What is the difference between the produce of the *banana*, and that of the *cereal gramina* of Europe?

The mean produce of the *banana* is to that of wheat as 133 to 1, and to that of potato-root as  $44\frac{2}{3}$  to 1.

Calculating according to the mass of vegetable substance necessary to support a full grown person, what proportion would the banana bear to wheat?

The same space of ground cultivated with the banana will support fifty persons, which if cultivated with wheat would only support two persons, or one twenty-five.

What would be the proportion of ~~the~~ ~~produce~~ ~~of~~ ~~the~~ ~~banana~~ ~~to~~ ~~wheat~~?

A Scotch acre of potatoes, according to John Sinclair, will support nine persons, which is the proportion of nine to two of wheat, and of nine to fifty of the banana.

What is the principal food of the people of Mexico?

Maize: this modifies by its price all other kinds of grain.

Is the amount of the produce of maize unequal?

Of all the *gramina* sown by man, none is so unequal as maize.

What is the range of variation in the produce of maize?

According to the changes of humidity and the mean temperature of the year, maize varies in the same field from 40 to 200, and 300 to 1. The price of maize varies from 2s. 2d. to 22s., the fanega of 100lbs.

Does maize yield more than one crop in the year in Mexico?

In warm and very humid regions, maize will yield from two to three harvests annually, but one only is generally taken.

What are the chief varieties of maize ?

There is one which ripens in two months after it has been sown—there is another kind in the province of Nicaragua which is ripe in 30 or 40 days after being planted, but these early varieties, where vegetation is so rapid, have less farina, and are not so nutritious as the others.

How is maize eaten ?

Either boiled or roasted : when beaten, maize yields a nutritious bread called *arepa*.

How is the meal used by the Mexicans ?

It is employed like gruel in the soups they call *atolli*, in which they mix sugar, honey, and sometimes even ground potatoes. Many fermented liquors are extracted from maize by the Mexicans.

How long will maize keep in these regions ?

Maize will keep three years in Mexico, in the temperate climates, and in the valley of Toluca, and all the high levels, where the mean temperature is at  $57^{\circ}$ , of Fahrenheit, or six years.

Is the produce sufficient for the population ?

In good years New Spain produces much more maize than it can consume.

Where is the surplus consumed ?

Chiefly in the West India Islands, where sugar, coffee, and cotton, engage the attention of the planters.

Which of the European species of grain holds the first rank in Mexico ?

Wheat.

By whom was it introduced ?

By a negro slave of Cortez, who found three or four grains of it among the rice that was served to maintain the Spanish army.

What regions of Mexico are most favourable for the growth of wheat ?

The temperate region, especially where the mean temperature of the year does not exceed from  $64^{\circ}$  to  $66^{\circ}$  of Fahrenheit, seems most favourable to the cultivation of wheat, spelt, barley, oats, and rye.

What elevation is necessary for the cultivation of these grains in the equinoxial parts of Mexico ?

Not lower than from 2,629 to 2,952 feet above the level of the sea.

How is the wheat grown in so dry a climate?

The wheat harvests are rich in proportion to the quantity of water procured from the rivers by means of irrigating canals.

Is the produce great in lands thus artificially cultivated?

The produce of wheat is astonishing.

What is the proportion as compared with that of Europe?

Humboldt gives twenty-five bushels for one as the annual produce of the whole average of the corn lands of Mexico. In France, the maximum of the ratio of the increase would be as ten to one; in England perhaps twelve. In the poorer parts of Germany from five to six bushels for one is reckoned a very good crop. In Kentucky, twenty-two is the maximum; but in Mexico, when irrigation is properly conducted, and the year is good, from sixty to eighty bushels for one have frequently been produced.

With this prodigious productiveness, is wheat cheap in Mexico?

No, it is half as dear again as at Paris, and it considerably exceeds the price which it bears in the English market.

Of what country is the potato a native?

Of America.

Was it known in Mexico, when first invaded by the Spaniards?

No.

In what part of Mexico has the potato been lately discovered growing in a wild state?

In the vicinity of the mountain Orizova, at an altitude of 10,000 feet.

Where is this vegetable much cultivated now?

In the highest part of the central land, where it is found admirably adapted for those elevated and dry regions.

How do the Mexicans preserve their potatoes?

The Mexicans, like the Peruvians, preserve their potatoes for whole years by drying them in the sun.

When hardened and deprived of their water what are they called?

*Chunus.*

Describe the potato as seen in Mexico by Humboldt.

It was of a spherical form, and more than an English foot in diameter.

What other vegetable roots form the base of Mexican subsistence?

The principal are the *oca*, the *igname* and the *batatis*; the first growing on the summit and declivity of the table-land, the two latter, in the warm region of Mexico.

What is the *igname*?

The *igname*, on account of the enormous mass of nutritive matter at the roots, is much preferable to the potato, but it cannot be successfully cultivated, except in regions where the mean annual heat exceeds 64° of Fahrenheit.

What are the other vegetables peculiar to Mexico?

The *cacomite*, the *tomati*, the *mani* or ground pistacio, and different species of pimento, the fruit of which is as indispensable to the natives as salt is to the whites, are all peculiar to Mexico.

What other vegetable productions are cultivated in Mexico?

All the garden stuffs, and fruit trees of Europe are now cultivated in Mexico, in addition to those peculiar to the climate.

Are the native fruits numerous?

In the market of Mexico there are daily sold more than sixty kinds of native fruits; and this variety of fruits is to be found all the way from Guatemala to the Californias.

Are the bread-fruit of the South Sea Islands, the flax of New Zealand, and the sugar-cane of Otaheite, included?

No, these plants are still unknown in Mexico, although they are now cultivated in the British and Spanish West India Islands.

Do oranges and citrons grow there?

Orange and citron trees flourish vigorously in the central regions.



Do olive trees?

There is only one olive plantation in all Mexico,—namely, that of the Archbishop of Mexico, two leagues S.E. of the capital.

Is the vine cultivated?

It is but partially, this species of cultivation having been always discouraged by the Court of Madrid.

Where is the vine most successfully cultivated?

In some districts of New Mexico; where no wine is used, but what is produced in the country.

At Parras, in Colcahuli, containing 7,000 inhabitants, the whole population is employed in this species of cultivation.

What is the favourite beverage of the Mexican Indians?

The juice of the *agave*, a shrub which is cultivated throughout the whole space where the Aztec language is spoken.

What kind of soil is required for the *agave*?

This plant thrives in the most arid soil; is neither affected with cold, nor drought, nor hail.

What is the name and quality of the juice?

It is fermented in three or four days, and is then called *pulque*; this liquor resembles cider in taste, and is esteemed an excellent and nutritive drink.

What spirit is made from it?

A very intoxicating brandy, called *mexical*, which was strictly prohibited by the Spanish government.

What other use is made of the *agave*?

The *agave* shrub also supplies the place of the hemp of Asia, and the papyrus of Egypt. All the Mexican manuscripts carried to Europe, are written on paper made of the leaves of the *agave*, a thread called *pita* which has the advantage of never twisting is prepared from it, and its thorns serve, like those of the Cactus, for pins and needles.

Has the cultivation of the sugar-cane made much progress in Mexico?

The sugar-cane is cultivated in the intendencies of Vera Cruz, Guanaxuato, La Puebla, Mexico, Valladolid, and Guadalajara.

What is the mean temperature most suitable to the cultivation of this plant ?

From  $75^{\circ}$  to  $77^{\circ}$  of Fahrenheit.

At what elevations is it grown in Mexico ?

It is cultivated on the declivity of the table-land at an elevation of 3280 feet, and at a temperature of from  $66^{\circ}$  to  $68^{\circ}$  only ; and even on the central table-land, sugar vegetates vigorously, without suffering from frost in winter, at an elevation of from 4952 to 4920 feet.

What is the highest limit of sugar cultivation in Mexico ?

In favourable exposures, especially in valleys screened from the north wind by mountains, it reaches 5561 feet, and even as high as 6211 feet above sea level. Sugar plantations exist, to the north of Guanaxuato, in north latitude  $22^{\circ} 30'$ .

Is the Mexican sugar manufactured by slaves or by free hands ?

Almost all the Mexican sugar is manufactured by Indians, and, consequently, by free hands.

Was this the case formerly ?

No, but the wars with England prevented the planters from obtaining a sufficient supply of slaves ; and as numbers of these also perished from change of climate on the road from the coast, the great proprietors endeavoured to propagate a race of labourers, by giving liberty to a certain number of slaves annually, and encouraging them to intermarry with the native Indians, which they soon did to a very great extent.

What is the amount of produce ?

In the warm and fertile parts of New Spain, and in plains capable of irrigation, where plants with tuberose roots, such as the igname and the batatis, have preceded the cultivation of the sugar-cane, the annual produce amounts to from 4633 to 6178 lbs. per hectare of 107,639 feet, but the mean produce is 3089 lbs. on the same space of ground.

Is much sugar exported from Mexico ?

The greatest part of the sugar produced in New Spain is consumed in the country.

What is the amount of the cultivation of cotton ?

Although the soil is equally favourable for the cultivation of cotton, yet the quantity cultivated is comparatively inconsiderable.

Where is cotton chiefly cultivated?

On the south sea-coast from Acapulco to Colima, and at the port of Guautlan, and to the south of the volcano of Jorulla, the finest quality is cultivated; but the want of machinery for separating the cotton from the seed, and the high price of carriage, are obstacles to the cultivation.

Is much coffee cultivated?

The cultivation of coffee is almost unknown in New Spain, the whole quantity consumed not exceeding 400 or 500 quintals annually.

Is the cacao tree as much cultivated now as it was formerly?

No, not so much as it was at the time of the conquest of Mexico, when the Spaniards became acquainted with this precious plant, and afterwards transplanted it into the Canary Islands, and the Phillipines.

Whence is the modern term *chocolate* derived?

From a beverage formerly prepared by the Mexicans, called by them *chocolate*.

What use was formerly made of the nuts as currency;

Six nuts were equivalent to one penny—English.

Where is cacao now chiefly cultivated?

In Guatimala, which, in conjunction with Maracaybo, the Caraccas, and Guayaquil, supply the consumption of Mexico, amounting annually to 3,300,000 lbs.

What other articles of commerce are produced in Mexico?

All the vanilla used in Europe comes from Mexico, and is produced on a surface of a few square leagues of ground in the intendancies of Vera Cruz and Oaxaca. Sarsaparilla is also produced on the same eastern slope of the Mexican Alps, where the vanilla is produced. Red pepper is grown and consumed in vast quantities. The famous medicine Jalap, so named from the town of Xalappa, where it is cultivated, vegetates at an absolute height of from 4264 to 4592 feet above the sea.

What is the Jalap plant?

It is a species of convolvulus, which delights in a temperate climate, shaded vallies, and mountain slopes.

What is the state of the cultivation of tobacco?

This was much restricted by the introduction of the crown monopoly in 1764.

Are the Indians fond of it?

The Indians themselves make no use whatever of this noxious weed.

Is Indigo much cultivated?

The cultivation of indigo is much neglected in Mexico, but the indigo is annually imported from Guatemala, where the total annual produce of the plantations amounts to £600,000 sterling.

What are the domestic animals of Mexico?

With the exception of the cochineal insect, the most valuable animals known in Mexico have been introduced by Europeans.

What domestic animals had the ancient Mexicans?

The ancient Mexicans had not even reduced to a domesticated state the two species of wild oxen, which wander in immense herds near the plains of the Rio del Norte; they were unacquainted with the lama of the Cordilleras of the Andes; and made no use of the wild sheep of California, or of the wild goats of New California.

What animal food did the inhabitants possess?

Among the numerous species of dogs peculiar to Mexico, one species, the *Techichi*, served for food to the inhabitants.

What was the effect of the want of other domestic animals, before the Spanish conquest, on the condition of the people?

That a large portion of the people were forced to labour as beasts of burden, and to do that service which is now performed by mules.

Have the domestic animals imported from Europe increased?

The oxen, sheep, horses, and hogs, have multiplied amazingly, especially in the vast plains of the internal provinces.

In what particular do the natives of Mexico resemble the Chinese, and Cochinchinese?

That they care very little for milk, butter, or cheese.

What is the character of the horses ?

That those of the northern provinces are as celebrated for their excellent qualities as those of Chili ; both are said to be of Arabian extraction.

What are the chief beasts of burden ?

Mules, which would be still more numerous if so many of them did not perish on the high-way, from the excessively fatiguing journeys of several months continuance. The commerce of Vera Cruz alone employs 70,000 mules, and 5000 are employed in the carriages of the city of Mexico.

Is the rearing of sheep much attended to ?

No, it has been wonderfully neglected in all the Spanish colonies, none of the travelling Merino sheep seem to have been introduced, and no care has been taken to ameliorate the breed.

What wild animals are peculiar to Mexico ?

The chief of these are the gigantic stags of New California, called, *venados* by the Spaniards. This is said to be the most beautiful quadruped of America, and is quite different from the elk of the United States.

What other wild animals are there ?

The tapir, great numbers of monkeys, bears, wolves, foxes and wild cats ; all these, except the tapir, are common to both continents. The jaguar is met with in the lower part of Mexico ; of the hog there are only two varieties, the one introduced from Europe, and the other from the Phillipine Islands.

Have they increased ?

They have multiplied amazingly on the central table-land, and in the valley of Toluca a very extensive and lucrative commerce in bacon is carried on.

Are the feathered tribes numerous ?

They are so numerous, and of such various appearances and qualities, that Mexico has been called the country of birds, as Africa is of quadrupeds.

What number of birds peculiar to Mexico have been described by Hernandez ?

Two hundred species.

What is said of the eagles and hawks?

That they are allowed to be superior to those of Europe; one hundred falcons were sent annually into Spain at the desire of Phillip II. The species of Mexican eagle called *isquauhtli*, which is the largest and most beautiful, will attack, not merely the larger birds and quadrupeds, but even man himself.

What is peculiar in the Mexican ravens?

That they do not, like those of other countries, feed on carrion, but upon grain.

Are aquatic birds numerous?

There are at least twenty species of ducks, also vast numbers of geese, with several species of herons, swans, pelicans, &c.

What domestic bird has New Spain given to Europe?

The largest of all, the turkey, several thousands of these were in the poultry yards of the unfortunate king, Montezuma, when the Spaniards conquered Mexico.

What is said of the humming bird?

That this beautiful race are scattered over the whole American Continent and its islands, the most diminutive species being smaller than some kinds of bee. These birds were great favourites with the ancient Mexicans, who called them "beams of the sun," and used their feathers as ornaments for their superb mantles.

What insects are reared in Mexico?

Bees are extremely productive in the province of Yucatan, they are said to be without stings, and called, on that account, by the Spaniards "little angels." The Cochineal Insect is a native of Mexico, and feeds on a species of cactus called the nopal, which was cultivated for the sake of the precious dye which the insect affords, long before the conquest of that country.

What fisheries are carried on, on the coast of Mexico?

The Mexican fisheries, are at present of no importance. The pearl fisheries of California were much more productive anciently than they are now. The western coasts of New Spain abound in spermaceti whales, but this fishery has been wholly engrossed by the British and Americans.

What are the minerals of Mexico?

The Mexican mountains, like those of the old continent, contain almost every mineral indispensable to agriculture, manufactures, and the fine arts. Unfortunately, however, the labour of man has in Spanish America been almost exclusively devoted to the extraction of gold and silver from the bowels of the earth. The mines of iron and lead, although rich in ore, have been wholly neglected; while those of gold and silver have been sedulously wrought, even while they exhibited but small indications of wealth.

How did this affect the manufacturers and miners?

That they suffered from the want of steel, iron, and mercury. Before the peace of Amiens the price of iron had risen in Mexico from 18s. 9d. to £11 5s. per cwt., and steel from £3 10s. to £56 17s. 6d. per cwt.

Has the backwardness of agriculture in the Spanish colonies been attributed to the superabundance of the precious metals, on good grounds?

It appears not, according to Humboldt, who states that no sooner is a mine discovered and wrought, than cultivation immediately commences in its vicinity; towns and villages are built, provisions are wanted for the workmen, and subsistence for the cattle employed in the mines: whatever the vicinity can produce is raised in abundance. A flourishing agriculture is thus established, which very frequently survives the prosperity of the mine to which it was indebted for its origin.

What are the principal rocks which at present furnish almost all the silver of Mexico?

They are porphyritic, reposing on beds of primitive slate, grey wacke, and alpine limestone.

At what height are the most celebrated mines of Mexico situated?

At altitudes above the sea of from 5,904 to 9,842 feet, which great height tempers the climate of the mining towns: in which respect, the cold arid and disagreeable climate of the mining stations in Peru, where the absolute height is generally much greater, presents a striking contrast.

Were the ancient Mexicans content with those mine-

erals they found in their native state on the surface of the earth, or in beds of rivers, and ravines formed by torrents?

No, they applied themselves to subterraneous operations; and gold, silver, copper, lead, and tin, were publicly sold in the great market of Mexico.

Name the principal mines at present wrought.

The silver mines of Guanaxuato, whose annual produce bears to the produce of all the veins of Hungary and Transylvania put together, as  $6\frac{1}{2}$  to 1. The mine of Valenciana in Guanaxuato did not begin to pay until the works were 262 feet in depth. In 1768 it began to pay in proportion as the pit grew deeper. The mine is now wrought to the depth of 1,685 feet.

What occasions the necessity for sinking shafts or pits of so much depth?

The vein is first found at the surface, and is generally, in these mines, at an angle of  $45^{\circ}$ . In following the dip of the vein, the work is impeded, after a certain depth is arrived at, by water, and a shaft is then sunk, so as to intercept the vein at the termination of a gallery, in order to free the mine from water. The work is thus continued until it becomes necessary to sink another shaft still deeper, to clear the lower galleries.

What is the thickness of the principal veins?

They vary in thickness from nine to forty yards.

Name the other principal mines of Mexico.

The mines of Zacatecas, of Catorce, Pachuca, Real del Monte, Moran, the Biscaina vein, Zimapan, Durango, &c., &c., have afforded immense wealth, chiefly in silver. There are said to be 3,000 silver mines in Mexico.

What was the annual average in pounds sterling, of gold and silver coined in Mexico, from 1690 to 1806? £2,748,772 4s.  $2\frac{1}{2}$ .

Have these products exhausted, to any great extent, the mineral wealth of Mexico?

No, on the contrary, it is the opinion of Humboldt that New Spain produces only one-third of the precious metals which it would do under happier political circumstances—when the unfettered energies of the colonists, aided by European skill and capital, can be brought into operation.



How is gold obtained in Mexico ?

For the most part, from alluvious grounds, by means of washing. In the mines of *Yecorata* in Cinaloa, a piece of gold was found weighing as much as sixteen marks four ounces and four ochavas—value £540 sterling, which was sent to the royal cabinet at Madrid. *Pepitas* of pure gold have been found in Pimeria Alta in  $31^{\circ}$  north latitude, weighing from 5lbs. to 8lbs. Another, but the smallest portion of Mexican gold, is extracted from the veins which intersect the mountains of primitive rock, particularly in the intendancy of Oaxaca, either in gniess, or micaceous schist. This last rock is very rich in gold, in the celebrated mines of *Rio San Antonio*.

What is the thickness of the vein there ?

More than one foot six inches thick, the *gangue* being milky quartz, the richness very unequal. Native gold is also found chrystalized in many of the silver mines : indeed, there is scarcely a silver mine which does not contain some gold.

What other metals are found in Mexico ?

Copper is found in a native state in the mines of Ingara, to the south of the Volcano of Jorullo, and at San Juan Guetano, in the province of New Mexico. Tin is also abundant in the internal provinces, and especially in the vicinity of Durango. The iron mines are also very abundant in the intendancies of Valladolid, Zacatecas and Guanajuato. Lead abounds in the calcareous mountains in the north-east of the vice-royalty, especially in the district of Zimapan. Masses of *galena* are wrought at Lomo del Toro. Zinc is found, under the form of brown and black blende, in the veins of Ramos, Sombrerete, Zacatecas, and Jasco. Antimony is common to Catorce and Los Pozuelos. Arsenic is found among the minerals of Zimapan, combined with sulphur like orpiment. The liquid minerals, amber and asphalt, likewise occur in New Spain.

What precious stones occur in Mexico ?

A few diamonds are found, with amethysts and tourquoises.

What other stones are found ?

The mountains produce jasper, marble, alabaster,

magnets, steatites, jad, and talc. The fine marble of Puebla is found within a few leagues of that city. Near Santa Fé, a stratum of talc is found so large and flexible as to admit of being divided into thin cakes, of which the greatest proportion of the houses in Santa Fé, and all the villages to the north, have their window lights made.

What progress have manufactures made in Mexico?

They have made some progress, notwithstanding the exclusive policy of the Spanish government, and the strong prejudice of the natives against manual labour. Their total value was estimated by Humboldt at £1,800,000 sterling.

Of what do the manufactures of Mexico chiefly consist?

The printing of calicoes, at Puebla and in the vicinity of Mexico, has made, within these few years, great progress. Woollen and cloth stuffs were manufactured at Tezcuco. There are manufactories of hard soap at Puebla, Mexico, and Guadalajara. The abundance of soda in the high table-land is favourable to this manufacture. At one period there were nine manufactories of delf-ware at Puebla, but they have declined much from the low price at which the stone-ware and porcelain of Europe is imported at Vera Cruz.

The manufacture of gunpowder is extensive and a considerable number of large pieces of wrought plate, vases, and church ornaments, are annually executed at Mexico.

What is the character of the interior commerce of Mexico?

It is inconsiderable, chiefly from the unequal distribution of the population over such an immense surface, and the absence of good roads and navigable rivers.

Of what do the exports chiefly consist?

Of the precious metals, cochineal, jalap, indigo, log-wood, cotton, iron, paper, quicksilver, spirits and wines, vanilla; also, some sugar, flour, and tobacco.

Are the Creoles, or Americans, as they prefer to call themselves, rich?

Many of them descended from the first conquerors, or *enriched* by speculation in the mines, enjoy fortunes almost more than princely. Forty or fifty thousand pounds

a-year, is not an uncommon income, even for families who do not possess mines. The Conde Valenciano has repeatedly drawn from his mine £250,000 in one year. The Conde de la Regla, from the profits of another, presented to the King two ships of the line constructed of cedar.

What part of the American continent is nearest to Australia?

California.

What has recently been discovered there?

Gold in great plenty in the soil.

Why has that discovery caused an increased demand for Australian productions?

Because gold digging absorbs the labour necessary for the production of articles still more indispensable than gold is, to human existence.

Describe the usual course by sea from Sydney to the Bay of San Francisco.

By the Sandwich Islands, which are nearly in a direct course.

What is the distance?

From Sydney to Owhyhee is 4,380 nautical miles; from Owhyhee to Port San Francisco, 2,055; in all 6,435 nautical miles.

## CHAPTER XXII.

### CALIFORNIA.

Describe the probable extent of the gold region.

This seems to belong to the system of two parallel mountain ranges, namely, the Oregon or rocky mountains, and the chain called the Sea Alps of California.

How are these connected?

By a transverse chain, called the Snowy Mountains, which divides the waters of the Colorado, falling into the gulf of California, from those which join the southern branch of the Columbia, and flow towards the Pacific Ocean.

What is the height of the Snowy Mountains?

They are said to equal the highest part of the Rocky Mountains in elevation, but there is no evidence of this being the case.

In what latitude do these mountain ranges unite?

In latitude  $42^{\circ}$  north, where six great rivers have their origin, and some of the most lofty mountains are situated.

What is the extent and height of the Sea Alps of California?

These arise in the peninsula of California, and increase in height northwards to Sierra de Lucia and Sierra San Marcos, whence they run parallel with the coast and at a short distance from it, as far as Mount Olympus, when, passing through the centre of the Isle of Quadra,—called now Vancouver Island, they appear to join with the Sea Alps of the north-west coast, which continue the range northwards, till, at about latitude  $60^{\circ}$  north, it attains the greatest elevation, and appears to increase greatly in breadth in the territories of Russian America.

What name is given to the southern portion of this chain?

The *Cascade Range*, from the numerous rapids and falls occasioned by the course of the Columbia River, in its passage to the sea.

What is the probable extent of the country in which auriferous deposits may be looked for?

In a map of the geological structure of the globe, according to the theory of M. Boué, Vancouver Island, the Oregon Territory, and New California, including a narrow slip extending southward to Sonoras and Pimeria, appear to be of the same formation; and as the largest "*pepitas*" of pure gold have been found, as already stated, in Pimeria-alta, precisely in that narrow slip, it is reasonable to suppose that the whole basin of the river Colorado, as well as that of the river San Francisco, may contain gold-dust, and probably, also, that of the river Columbia.

Whence is the name of Pimeria derived?

From a numerous tribe of Indians called Pimas, who inhabit it.

Where is the *Casa Grande* situated, which is considered by the Mexican historians as the ancient abode of the Aztecs?

In the midst of the ruins of an ancient Aztec city, on a vast and beautiful plain, one league distant from the southern bank of the Rio Gila, a branch of the river Colorado.

Where was the first station of the Aztec nation said to have been situated?

Near the lake Teguyo, on the river S. Buenaventura, which falls into the sea near Monterey.

What ruins have been found there also?

Other *casas grandes*, supposed to have belonged to the fabulous city of Quivira, the Mexican Dorado.

What is the character of the Indians on the river Gila?

Their social state exhibits traces of an ancient civilization.

What traces?

Fathers Garces and Font, two missionaries, found the Indians to the south of the Rio Gila clothed, and assembled together, to the number of two or three thousand, in villages, where they peaceably cultivated the soil.

What did these Indians cultivate?

The missionaries saw fields sown with maize, cotton, and gourds.

What traces did they find still further north?

In the country of the Moqui, watered by the *Rio Yaquesilla*, in latitude  $36^{\circ}$  they were astonished to find an Indian town with two great squares, houses of several stories, and streets well laid out in parallel directions.

What has been remarked by Humboldt, respecting the Indians of the north-west coast of America?

That from the 33rd to the 54th parallel, their civilization is very remarkable, and likely to throw light on the first migrations of the Mexican natives.

Describe Old California.

Old California is a long peninsula in the Pacific, parallel to the coast of the continent from which it is separated by its deep gulf. The soil is not generally fertile, and there are no important streams, but the sky

is constantly serene and cloudless. It had long been considered an El Dorado or country of wealth, by the Spaniards, but these visions have been dispelled, although recent discoveries to the northward seem to have realized the old tradition there.

What articles of value have been found on the shores of the Gulf to encourage such hopes?

Pearls only,—whereof the fishery was long pursued with success, but is now nearly abandoned.

Describe the limits of New California.

New California extends from  $32^{\circ}$  to  $40^{\circ}$  N. lat., and is bounded on the north and east by territories little known, inhabited by Indians: on the south-east it is separated from the state of Sonora by the Rio Colorado, and the Gulf of California.

What was the chief place of the missions of New California?

Monterey.

What is said of the soil and climate of New California?

That it is one of the most favoured spots on the globe as to soil and climate.

What grains and fruits have been produced there?

All the varieties of grain and fruit, peculiar to the best European regions, grow in the highest perfection.

Have the vine and the olive been planted there?

Both the vine and the olive have been more successfully reared there than in any other part of America?

Have the missionaries been successful in converting the Indians?

About 7000 converts have been induced to quit a wandering life, and apply themselves to cultivation.

Name the principal Cape.

Cape Mendocino in about the same parallel as the Snowy Mountains.

What has been observed of the climate?

That it is much more mild than that of the same latitude on the eastern coast of the new continent.

Is the sky serene and cloudless?

No, the sky is foggy; but the frequent fogs, which render it difficult to land on the coast near Monterey and San Francisco, give vigour to vegetation, and fertilize the soil, which is covered with a black spongy earth?

What European grains have been cultivated there ?  
Wheat, maize, and beans, are cultivated in abundance.

Have the vegetables and fruit trees cultivated in Spain, been introduced into the gardens of the Indians ?

They have.

By whom ?

By the thirty-six monks of St. Francis who governed the missionaries.

Were wild vines found there by the first colonists ?

The first colonists found on their arrival in 1769, shoots of wild vines in the interior, which yielded very large grapes, but of sour quality.

Did the missionaries introduce the vine of Europe ?

They introduced the *vitis vinifera* of Europe, and good wine is made all along the coast, south and north of Monterey, to beyond latitude  $37^{\circ}$ .

Where is the olive cultivated ?

The European olive is successfully cultivated near the channel of the Santa Barbara, and at San Diego : the oil extracted is as good as that of the valley of Mexico, or the oils of Andalusia.

Why has that fine country continued until now unexplored, whilst the colonization has been left to monks ?

Apparently because the feeble hold of Spain on her American colonies could not grasp it.

Is the prospect much improved, now that the territory has been ceded to the United States ?

Not much ; that nook of the Pacific being so inaccessible to European commerce and colonization, either by land or sea. The city of Mexico is at the same distance in a straight line from Philadelphia, as from Monterey, which is the chief place of the missions of New California. Though more remote, these regions seem much more accessible from China or Australia, by means of steam navigation.



## CHAPTER XXIII.

## UNEXPLORED REGIONS OF NORTH AMERICA.

To whom do these belong?

Virtually to the natives; for notwithstanding the claims set up by Russia, Great Britain, and the United States, it cannot be said that any of these nations are in actual possession. The American Government claims the whole region west from the Rocky Mountains to the Pacific, south of the 49th parallel of latitude. The British Government claims the entire region drained by the Columbia River; but Great Britain offers, in order to determine the question, that the northern boundary of the United States territory, west of the Rocky Mountains, should, for a considerable distance, be carried along the same parallel of latitude, the 49th, which forms their northern boundary on the eastern side of these mountains. From the point where the 49th degree of latitude intersects the north-eastern branch of the Columbia river (called in that part of its course *McGillivray's River*), the proposed line of boundary would be along the middle of that river till it joins the Columbia; then along the middle of the Columbia to the ocean. The Hudson's Bay Company can show that their servants in 1803, had already crossed the mountains and formed settlements on the northern branches of the Columbia, then called the "*Oregon*," or "*River of the West*." A settlement, called *Astoria*, founded by Mr. Astor, came by purchase, into the possession of this company, who have fixed their chief station higher up the river, at *Fort Vancouver*, where they have a number of settlers and a considerable tract of uncultivated land.

What is the general course of the Columbia?

This river rises amidst the most rugged steepes of the Rocky Mountains, in about latitude  $54^{\circ}$  and after a north-north-west coast of about 1000 miles, falls into the Northern Pacific in about latitude  $46^{\circ}$ .

*How high is the river navigable from its mouth?*

*The tide flows up the river 183 miles, and large sloops*



may ascend so far with safety : vessels of 300 tons burden reach the entrance of the Multnomah, 125 miles from the mouth.

What is its general depth below the rapids ?

Thirty feet.

Its general breadth ?

From one to three miles to its junction with the Multnomah.

Is the water good ?

Its waters are clear, and not muddy, like those of the Missouri.

What other settlements have the Hudson's Bay Company formed on the river Columbia ?

Fort George, on the south side of the river, and eight miles from the sea.

How far is Fort Vancouver distant from Fort George ?

Fort Vancouver is eighty miles higher up the river.

Describe its situation.

It is built in the centre of a very large and level prairie, already covered with fields of potatoes and pease ; and the varied produce of the Company's farm is annually increasing by seeds of plants and vegetables sent from Canada.

What native roots are found useful there as food ?

The margins of the prairie abound in the beautiful *Phalangium esculentum*, a root so much used by the Indians as a substitute for bread ; whilst the tubers of a species of *Sagittaria*, which grows on the marshy banks of the river, afford an agreeable substitute for the potato. In the neighbouring woods are some of the choicest plants of which the north-west coast can boast.

Describe Fort George.

Fort George is a square building, almost entirely composed of wood surrounded with palisades, and furnished with bastions.

What land is in cultivation near it ?

Eighty acres of land round the fort have been cleared, which produce fine crops of potatoes, and the cattle find plenty of pasture on the banks of the river.

Whence are the cattle brought ?

The horned cattle were brought from California, and the hogs, which thrive remarkably well, from the Sandwich Islands.

Are there any Indian settlements near the Fort?

The Indian village is a little to the westward of the fort on a sandy beach, containing about twelve houses, each holding from fifteen to thirty inmates.

What trade is carried on at the forts?

It consists wholly of furs and skins.

By whom is it carried on?

By the north-west company of Canadian traders, who through the activity of their servants, in spite of American competition, have acquired almost the whole of the fur-trade of this region.

What skins are procured there?

Besides the same skins as in the eastern countries, this yields that of the sea-otter, which bears a very high price; but the reckless pursuit of it has so thinned the species, as to render the produce now of little value.

What becomes of the articles here collected?

They are sent round Cape Horn.

Name the principal Capes to the North of Cape Mendocino.

*Capes Orford, Gregory, Perpetua, Foulweather, Look-out, Point Adams, Cape Disappointment* (the two last being on the north and south sides of the entrance of the Columbia) and *Capes Shoalwater and Flattery*.

Name the openings or bays.

The inlets are those of the Trinity, St. George, Hayley's Bay, at the mouth of the Columbia, and Whitty's Bay, and the entrance of Fuca which terminates the coast.

What is the character of the coast from Cape Mendocino to Cape Flattery?

The coast runs in an uninterrupted line, unbroken by islands, sounds, or gulfs, differing in this respect from all the north-west coast, which as far as Behring's Straits, is studded with islands, and broken with numerous creeks and sounds.

What is the character of the country south of the Columbia?

Between the Sea Alps and Rocky Mountains, it is excessively mountainous, and totally destitute of timber. Between the coast range and the sea, timber is abundant, especially pines, some of which are said to be 300 feet high, and from thirty-six to forty-five feet in circumference, frequently presenting a solid trunk for upwards of 170 feet without a single branch.

What is the character of the tribes near the mouth of the Columbia ?

They do not cultivate the ground, but derive their subsistence solely from hunting and from fishing, which they practice, with considerable dexterity, in boats. The skins and furs which they collect, are exchanged with European vessels for bad guns, copper kettles, knives, tobacco, and above all, white and blue beads. These articles afford materials for a trade with the upper nations, whom they meet once a year at the falls of the Columbia.

What is the extent of the island of Quadra or Vancouver ?

It extends 220 miles in length, from the south-east point of the inlet of Juan de Fuca to Queen Charlotte's sound on the north-west, which separates it from Calvert's Island, and contains a surface of more than 14,000 square miles.

What is the climate ?

The character of the climate is similar to that of England ; but it is unquestionably milder in the winter.

Describe its position on the coast.

Vancouver's Island is said to occupy very much the same position with respect to the Pacific, which Great Britain does with respect to the Atlantic Ocean.

Has it many harbours ?

Its shores are indented with a multitude of harbours : indeed there is scarcely a part of the island which does not afford good shelter for shipping.

What is the character of the interior of the island ?

It is extremely varied : in the north there are high mountains ; in the south there are extensive plains of rich alluvial soil ; corn of various kinds ; fruit ; vegetables and cattle, are produced or thrive equally well. The

woods abound with deer and other game ; and the water is teeming with salmon in such abundance that it might be made an article of export to the Sandwich Islands and to China. Exports would also be found in timber and spars, which are here the largest and finest in the world.

What other product of Vancouver's Island, has increased its importance since steam navigation reached the Pacific ?

Coal, which the island contains in great abundance.

In what part has it been seen ?

At M'Neil's harbour, on the north-east side of Vancouver Island. The harbour affords excellent anchoring ground in twelve or fifteen fathoms close to the shore. Round this harbour, and in many places below high-water mark, the coal appears on the surface in great abundance. The natives, with their rude tools, wooden spades, &c., have been able to supply forty or fifty tons in a few hours.

Where is Nootka of Captain Cook ?

The channel of Tusio separates the small island of *Nootka* or Yucuatl. This small island is about twenty miles broad, and contains, on its eastern side, the port of *Nootka* or Yucuatl, in west longitude  $126^{\circ} 35'$  and north latitude  $49^{\circ} 35' 10''$ .

What is the climate of Nootka ?

The climate of Nootka, and the coast in the vicinity, is remarkably mild.

What are the chief vegetable productions ?

The hills are covered with pines, oaks, cypresses, rose bushes, vaccinium, and romedes. The trees are of vigorous growth and great size ; and among the rocks and borders of the woods, are strawberry plants, raspberries, currants, and gooseberry bushes, all in a flourishing state.

What are the principal animals ?

Racoons, martins, and squirrels. Birds are not numerous.

Describe the coast northward from the Columbia.

It is faced by numerous islands, lofty, and covered with immense woods. The ground is wholly uncultivated but it yields spontaneously an abundance of delicious berries, also onions and other roots.

Whence do the natives obtain their chief supplies?

From the ocean, which abounds in an extraordinary degree with fish of every size. The smaller kinds, serving for food, are taken in abundance, by merely passing through the water a long rake with pointed teeth. The chiefs combat the whale, the sea-lion and the otter, whose skins supply them with rich robes.

Describe the islands and inlets to the north-west of Vancouver's Island.

From Queen Charlotte's Sound, at the north end of the Island, Queen Charlotte Islands extend from  $51^{\circ} 42'$  to  $54^{\circ} 13'$  north latitude, and from  $129^{\circ} 54'$  to  $133^{\circ} 18'$  longitude. Dixon's inlet separates these Islands on the north-west from the Archipelago of the Prince of Wales, in which the largest and most Western is called Prince of Wales's Island.

What harbour is on the western coast of Prince of Wales's Island?

Port Buccarelli, which is a fine haven, surrounded by seven active volcanoes.

What is its latitude?

$55^{\circ} 24' N.$

What islands lie immediately to the northward of this?

King George's Islands, and the Archipelago of Pitt. Name the sound to the north-east of this group.

Cross Sound, which penetrates far into the continent.

Name the station erected by the Russians on George the Third's Island.

New Archangel, which they make the capital of all their settlements in America.

Describe it.

It is only a large village of about 1,000 inhabitants, where not only the private houses but the public buildings and fortifications, are constructed of wood.

What trade is carried on there?

The great object of it is to collect the skins of the sea-otter for the market of Canton, where they are in very extensive demand.

What is the value of these skins?

Previous to 1780, a single skin was known to bring

from 50 to 100 piastres (£20) the market has since been over-supplied, the price had fallen in 1790 to fifteen piastres, and has continued since to decline.

What is the estimated annual value of the furs drawn by Russia from her North American possessions?

£40,000.

To whom belongs the territory inland?

The interior territory, under the titles of New Norfolk, New Cornwall, and New Albion, has been adjudged to Britain, and contains settlements of the Hudson's Bay Company.

What is the boundary line betwixt the Russian and British possessions in this quarter?

It extends from Demarcation Point, on the coast of the Icy Ocean, along the 141st degree of west longitude, to Mount St. Elias, near the Pacific.

What is the height of Mount St. Elias?

17,000 feet; it is visible sixty leagues distant at sea, and is the culminating point of that mountainous belt which runs along the whole coast from the head of Cook's Inlet, in north latitude  $60^{\circ}$ , to the south-east point of the gulf of Georgia, in north latitude  $49^{\circ}$ , where this belt joins the chain already described as the Sea Alps of California.

Name the summit nearest in point of height to Mount St. Elias.

Mount Fairweather, 15,000 feet.

Where is the Russian factory of St. Simon or Yakouat?

Near Cape Suckling; (Cape Elie of the Russians).

What is the climate in that part of America?

The proximity of mountains covered with eternal snow, and the extent of the American Continent in the latitude of  $58^{\circ}$ , render the climate of this part of New Norfolk excessively cold, and inimical to the progress of vegetation.

What is the character of the coast?

It is not a desert coast, but bordered by populous villages, whose inhabitants have made a certain progress, *if not in civilization*, at least in the arts.

What kind of soil is there?

Though the spade or hoe is nowhere employed upon it, it yields spontaneously a profusion of delicate berries ; and the neighbouring seas swarm with large fish, whose coarse oily substance is suited to the palates of the rude inhabitants, while their skins supply at once warm and beautiful clothing.

What other factories or forts have been established in this district ?

Fort Alexander, near the mouth of Port Chatham, the forts of the Tuk's Island (Green Island of Vancouver) and Tchalta, (Hinchinbrook Island).

Name the small settlement of the Russians on the coast of New California, some miles North of San Francisco.

*Bodega.*

What sort of a place is it ?

It is small and destitute of a good harbour, but it affords the means of carrying on a considerable trade with California.

Describe the line of demarcation between the Russian and British possessions in this quarter, as fixed by treaty in 1825, where it extends southward of Mount St. Elias.

The line extends from the island called Prince of Wales's Island, which is to belong to Russia—commencing from the southernmost point of which island, the said line ascends to the north along Portland channel to the point of the continent where it strikes the 56th degree of north latitude. From this last mentioned point the line follows the summit of the mountains parallel to the coast as far as the point of intersection with the 141st degree of longitude. It is further stipulated, that wherever the summits of the coast range shall be at a greater distance than ten marine leagues from the coast, that the limits between the Russian and British possessions " shall be joined by a line parallel to the windings of the coast, and which shall never exceed the distance of ten marine leagues therefrom."

What has led to the determination of such limits in these remote regions ?

*The fur trade*, which has attracted the traders of

different nations, the one setting out from the western boundary of Asia, and the others from the eastern boundary of America, until, after traversing these two great continents, they now find themselves face to face on the western shores of America.

What new fur-ground remains to be explored?

None; and although the supplies of this commodity may not, for some years, diminish in any very sensible degree, yet it is evident that the summit of the trade has been reached, and perhaps overpassed.

## CHAPTER XXIV.

### RUSSIAN AMERICA.

Describe the aspect of that part of the American continent, comprehended under the name of Russian America.

It is generally of a very alpine and sterile character. La Perouse estimated the range of mountains which terminates at Croso Sound, to be upwards of 10,000 feet in elevation. The primitive mountains of granite or slate, in some places rise immediately from the sea, and have their summits constantly covered with snow.

Describe the line of coast generally.

The whole extent of this coast north of the island of Fuca, is so studded with islands, and so broken with sounds, bays, and inlets, as to present no appearance of continuity. From the entrance of Fuca to the head of *Cook's Inlet*, is 1200 miles in direct distance. From thence the coast trends south-west to Cape Alaska, the extreme western point of the peninsula of that name, and 1200 miles east of Kamtschatka. The line of coast in this direction is 800 miles. From Cape Alaska to the head of *Bristol Bay*, the coast turns to the north-east for a space of 350 miles—thence it bends north-west for 150 miles, and then continues almost due north 400 miles to the head of Norton Sound,—thence its general direction is 160 miles further north-west, to Cape Prince of Wales, a lofty peaked hill at the western extremity of North America; making a total of 3060 miles, exclusive of the windings of the coast.



What is the direction of the coast beyond Cape Prince of Wales?

North-east, as far as the Icy Cape in  $70^{\circ} 29'$  north latitude, and west longitude  $160^{\circ}$  a distance of six hundred miles.

Where is the island of Kodiak?

South-east of the Alaska promontory, which is separated by the straits of Cheligoff.

Name the port in this island formerly the chief seat of the Russian trade.

St. Paul.

Where is Cook's Inlet?

It is a long inlet extending northward of Kodiak, discovered and explored by the celebrated navigator. Beyond it is Prince William's Sound.

What is the name of the strait between America and Asia?

Behring's Strait, fifty-two miles broad.

Name the headland on the western side.

The East Cape of Asia, a bold mountainous promontory covered with snow in the midst of summer.

What is the extent and position of the Aleutian Islands?

The Aleutian Islands extend from the south-west point of the peninsula of Alaska, between the parallels of  $51^{\circ} 40'$  and  $55^{\circ}$  north lat. and divide the sea of Behring, as it is sometimes called, from the great northern ocean. They describe, between Kamtschatka in Asia, and the promontory of Alaska in America, an arc of a circle which almost joins the two lands together.

What is their character?

They are in general mountainous and rocky, and rise to a considerable elevation towards their centre. The rocks are porphyritic, schistose, and volcanic.

What volcanoes exist there?

Volcanic fire is discharged from many of the steep and lofty peaks which rise from almost every island. In 1795 an island was thrown up by an irruption from beneath the sea, which continued to increase till, in 1807, it measured twenty miles in circuit.

What is the nature of the soil?

The rugged surface of these islands is ill-fitted for culture, yet the interior vallies display considerable richness of vegetation, and the islands nearest to America produce pines, larches, and oaks.

On what do the inhabitants chiefly depend for subsistence?

On the vast shoals of fish, and of amphibious animals which abound in the surrounding seas. The flesh of the seal affords the chief supply of food.

What quadrupeds are found there?

Only foxes and mice.

What is the character of the inhabitants?

They are mild in their manners and deportment, and display a considerable degree of industry and ingenuity.

What is their chief occupation?

Fishing and fox-hunting.

Describe their dwellings.

They dwell in large subterraneous mansions, or rather villages, partitioned into numerous apartments, and containing from 50 to 100, or even 150 inhabitants.

With what are these abodes covered?

With turf, being almost on a level with the surrounding country, from which they are scarcely to be distinguished.

Name the four groups into which the Russians divide these islands.

1. The Aleutians, properly so called, of which the largest and most populous, is Aton; of these the largest is Behring, though uninhabited. Copper island contains a supply of that metal, from which little or no benefit has yet been derived. 2. The Andreanousky Islands, remarkable for the many volcanoes they contain. 3. Rat's Islands, a small group, of which Kiska is the principal. 4. The Fox Islands, the most populous and important of the groups. The chief are Oonalaska and Oonimak, in which last, the Russians have a small garrison and naval depôt.

## CHAPTER XXV.

## ASIATIC RUSSIA OR SIBERIA.

Describe the coast line of Asiatic Russia on the Pacific.

The coasts of the two seas of Kamtschatka and Okhotsk, form the eastern limit, to Mount Khingun-Alin in the Stannovoi chain, where the southern boundary runs along the mountains of Okhotsk.

Describe the climate of these regions.

The air, naturally cold, is rendered still more so, by vast mountains covered with glaciers, and by the influence of the frozen sea. The great Pacific Ocean is not adequate to counterbalance its effects, being itself cooled by a great number of icebergs, which enter it through Behring's Strait. These icebergs are often stopped between the Aleutian Islands and Andrinow, and occasion the cold fogs with which this part of the sea is covered.

In what direction are they finally carried?

They are carried by the general current of the ocean from east to west, that is, from America to Asia, where they accumulate in the gulfs, producing unchangeableness of physical circumstances, climates which no industry can sensibly ameliorate.

What is the length and breadth of Kamtschatka?

This territory is about 300 miles in length, by 300 in its greatest breadth.

What is its position on the globe?

It extends from  $51^{\circ}$  to  $63^{\circ}$  north lat. and between  $155^{\circ}$  and  $173^{\circ} 10'$ , east longitude, terminating towards the south in Cape Lopatka.

What is the climate of Kamtschatka?

Although its position ought to give to the greater part of it a climate like that of Britain, the winds blowing from the plains of Siberia, and from the vast polar seas adjacent, induce an arctic climate, and allow scarcely three months of summer. A chain of mountains traverses nearly the whole length, some of whose peaks rise to an extraordinary height.

What is the height of the volcanic peak of Klinchewsk ?

15,825 feet above the sea.

What harbours are known on the coast of Kamtschatka ?

The cove of Awatscha, and the haven of St. Peter and St. Paul in the interior, are but little exposed to the influence of sea winds.

What rivers arise in the mountains ?

The Kamtschatka is the only navigable river, admitting vessels of 100 tons as far as 150 miles inland.

What is the quality of the soil ?

It is volcanic and stoney ; winter lasts so long, that the soil at the depth of twenty-four or thirty inches is always frozen. Potatoes never ripen, and peas only flower : but turnips and radishes thrive amazingly, and grass grows to a great height.

What grain is produced there ?

Attempts have in vain been made to rear the coarsest kinds of grain peculiar to the most northern climates. There are, however, berries of various kinds, some roots, which, when dried, supply the place of bread, and a gramineous plant, from which they contrive to extract a spirit.

What compensation has nature provided in the animal world for this deficiency of vegetable productions ?

A great profusion of animal life, which fills alike, earth, water, and air, and in which no territory on the globe seems to rival this. Kamtschatka has been called the paradise of sportsmen. The land animals afford a valuable prize, being all covered with rich furs and very abundant. The coasts swarm with seals and other marine animals ; the rocks are coated with shell-fish ; the bays are almost choked with herrings, and the rivers with salmon. Flocks of grouse, wood-cocks, wild geese, and ducks, darken the air.

What animals of chase have the most valuable skins ?

Foxes of various colours, a few sea and more river otters, with an immense number of sables. Bears, *wolves*, rein-deer and mountain sheep, and sometimes a few *lynxes*, are also to be found.

What substitutes have the inhabitants for draught animals?

"The dogs of Kamtschatka," Captain Cochrane says, "form a great part of their riches," being employed to transport fish, supply the house with water, the cattle with hay—in short, to do all the work that horses perform in England.

What do the Kamtschadales subsist on besides fish and wild animals?

On geese, ducks, swans, snipes, and wild-cocks, which they preserve by dipping them in water, which freezing, they will be good as long as winter continues; at other times they are salted.

What is the character of the people?

Hospitality is the most striking feature in their character; but they are also distinguished for their strict adherence to truth, and their honesty is proverbial. They will part with the most valuable furs for a trifling article, or a glass of spirits.

What other people inhabit the eastern extremity of Asia?

1. The gulfs of the Kolima and Anadir, belonging to the opposite oceans, enclose the extreme peninsula of the *Tchutchi*, a race who have preserved entire the independence so long lost by all the other nations of Siberia. 2. The *Koriaks* inhabit the country between the Anadyr and the peninsula of Kamtschatka.

Describe the territory of the *Tchutchi*.

The valleys are filled with morasses and small lakes; the mountains are of moderate height.

What is the distance from Yakoutsck to the peninsula of the *Tchutchi*?

About 2000 miles; there being only a population of eight or ten huts at intervals of 200 or 300 miles.

What has been placed along the route for the accommodation of travellers?

*Yourts*, or little square wooden huts, at the precise distance of twenty-five miles from each other, with a fireplace in the middle for which the pine woods always supply plenty of fuel.

Name the town to which this route leads.

Nischnei-kolymsk, on a bay of the Arctic Ocean at the mouth of the Kolyma.

What does this town consist of?

Fifty wooden houses, and about 400 inhabitants.

What is the nature of the soil there?

The soil yields neither grain nor herbage; but a few horses and cows are kept alive by cropping the tops of the bushes. The waters, however, yield food in boundless profusion.

Where do the *Tchutchi* meet the Russians for the purposes of traffic?

At the fair of Ostronaya, which, when visited by Captain Cochrane, was the resort of about 200 *Tchutchi* of both sexes, and of all ages, with 500 rein-deer.

What does that traveller say of the *Tchutchi*?

That they are a stout, rough, honest, bold, and fearless race.

What articles do they take off in trade?

About 40,000 lbs. of tobacco, averaging three rubles a pound, with various little articles of hard-ware, cutlery, and toys.

What do they give in return?

Sea-horse teeth, various skins, and furs of sea and land animals, the produce of their own coast, of the neighbouring islands, and of the opposite coast of America.

Are rein-deer numerous?

A Samoied is reckoned a rich man who has 100 or 150 rein-deer, but an economical Tunguse will keep 1000; a Koriak several thousands:—and it is said, that among the *Tchuktsches*, there are shepherds who own as many as 50,000.

What is the character of the Koriaks?

Cochrane says they have the same features, manners, customs, and language as the *Tchuktschis*. They are divided into two classes—in one of which the people are located; those in the other pursue a nomadic or wandering life.

Where do the located inhabitants reside?

Chiefly on the shores of the sea of Okhotsk, where they dwell in villages resembling those of Kamtschatka. The numbers amount to about 1600, and they live in a state of extreme misery.

What is the condition of the wandering Koriaks?

They pay no tribute to Russia, and often commit depredations on their more pacific neighbours.

What rivers of the Stanovoi chain fall into the Southern Ocean?

Besides the Anadyr already mentioned, the other rivers are the Khatirka, the Apuka, and Palotcha, three little coast rivers of the Coriak territory; the Kamtschatka, the Penshina, the Tilcha, the Ischiga, the Tauna, the Okhotsk, and the Uda: the Argun and the Schilka are tributaries of the great river Amoor.

Name the principal bays along the shore to the east of Okhotsk.

Taouskoi, East Taouskoi, Igiginshoia Gulf, and the Gulf of Penguinsk, the most northerly portion of that sea.

Name the towns at the head of the two last mentioned gulfs.

Igiguinsk and the Aklansk.

Name the town at the most western part of that sea.

Oudskoi, on the river Uda.

Describe the other rivers of Siberia.

These all flow parallel to each other, northward from the Stanovoi chain to the Frozen Ocean. They roll their sluggish waters through frozen plains, and it is only by a broken line, ascending the tributary of one river and descending that of another, that a laborious boat track, interrupted by frequent land-portage, is formed across Siberia to the Eastern Ocean.

Name the principal of these rivers.

The Lena, whose bed is very broad, and contains numerous islands.

Name the town on its banks, which forms the market at which the furs and other precious products of this desolate region are collected.

Yakoutsck, about 800 miles down the Lena, to which town there is a commercial line from Okhotsk; one in the opposite direction down the Lena to the shores of the Frozen Ocean; and one, the most important, through the interior of Russia to Irkoutsk, whence the route is continued to Moscow and St Petersburg.

How do travellers proceed from Yakoutsk ?

In passing the Lena, they ascend the River Aldan and descend the Rivers Maia and Yadoma, and thus complete their route to Okhotsk.

Name the mountain chain or branch from the Stanovoi range, near Okhotsk, which extends north-west towards the Lena.

The Aldan mountains.

What is observable in all the mountain chains around the Pacific, from Cape Horn to the coast range of Okhotsk ?

That they are steepest towards the Pacific, and that the greatest rivers flow in an opposite direction.

What rivers form the principal exception ?

The River Columbia, whose basin contains 194,000 square miles, and the Rio Colorado, whose basin contains 169,200 square miles.

To what nations do these river basins respectively belong ?

The first to Great Britain ; the second, by the cession of California, to the United States.

Name the greatest lake in Siberia.

The Baikal, whose dimensions almost entitle it to the appellation of an inland sea.

What is its extent ?

300 miles in length by 50 in breadth.

What is the character of its banks ?

It is encircled by lofty mountains, which, on the northern side, are particularly rugged and rocky, and crowned with woods.

What do Russian navigators call it ?

The Holy Sea.

Does it contain fish ?

It abounds with fish, particularly sturgeon, and with seals, the presence of which seems very remarkable, at so great a distance from the sea.

Is the water salt ?

Its water is completely fresh.

Name the islands in the Eastern Sea, comprehended in the province of Irkoutsk.

*Imoglim* and *Igeljim*, are two small inhabited islands



in Behring's Straits, the former about twenty-four miles long by three in breadth, the latter of less size. The island of *St. Laurence* was discovered in 1764; it is of considerable size, and lies nearly under the parallel of  $64^{\circ}$ . The island of *Ajah*, to the east of the latter island, belongs to the American Continent. The *St. Matthew* islands form a small group in the Sea of Kamtschatka. The *Pribylofschen* group in the same sea, are chiefly valuable as fur islands. The *Aleutian* Islands exceed in number 150, of which above 40 are inhabited. The principal island of these is Behring's Island, discovered in 1740. It is uninhabited and consists of a mass of granite rising in some of the inland hills to the height of 6400 feet. The Kuriles are twenty-six in number, and present a total superficies, according to Schubert of 145 German miles. The Little Kuriles, support a population of 1000, and pay a yearly tribute in furs. The grand *Kuriles*, at the south-west extremity of the group, belong to Japan, and enjoy a much more hospitable climate.

What are the chief animal productions in the interior of Asiatic Russia?

The rein-deer inhabits the Arctic and the cold zone where winter and summer are the only two seasons known. They are easily kept, and they serve the purposes both of horses and cattle. The roe is not found in higher latitudes than  $55^{\circ}$ . The bison is occasionally seen on the Caucasian frontiers. The buffaloe is chiefly confined to Cuban. The *bos grunniens* is hunted by the Tunguses. The black cattle of Russia, transported to Siberia, have diminished in size, but improved in strength. The Caspian antelope is found on the Caucasus, and the gazelle in Georgia. The camel and dromedary are kept by the Calmucks, Nogays, Kirghissians, Bashkirs, and Mongols, but do not live above the 55th parallel. The capra ægragus is seen on the high mountains of the Caucassian chain, and the Steinbuck also, according to Klaproth. The sheep are of three species: the Russian, the broad-tailed Kirghissian, and the wild sheep or *ovis ammon*. The first are small and short-tailed, and seldom have horns; in Tobolsk, however,

they attain the size of Kirghissian sheep. The broad-tailed sheep are principally kept by the Nomadic herds-men; some of whom possess flocks of from 4,000 to 10,000. The wild sheep occurs in Ischim, and along the Irtysh and Altai, along with the argali and mutton. The horses of the Mongols are uncommonly beautiful, sometimes they are striped like the tiger, or spotted like the leopard. An adon or stud of a noble Mongol, will frequently contain 3,000 or 4,000 horses and mares. The greater part of the Siberian horses are white. The *equus asinus hinnus* occurs in Lesghistan, and the onager or wild ass, on the borders of the Caspian. The Siberian dog greatly resembles the wolf, both in appearance and habits; but is trained to draw sledges with extreme swiftness. The black fox or *canis lycaon* occurs in the extreme north; the *Canis alopec*, on the Ural; and the *canis lagopus*, or stone fox, on the Arctic shores. The panther cat is found in Georgia, the *felis manul*, *felis chaux*, and *felis carakals*, also occur in the southern mountains. Ermines, marmots, martines and squirrels, are hunted in Siberia for their furs. The white bear is the most formidable wild animal of Siberia: the ounce occurs in Daouria, and the lynx and the glutton, everywhere.

What are the chief marine animals and fish?

The narwhal in the polar ocean, the walrus in the northern and eastern seas; the dolphin in all the seas; and the sea-wolf on the Kamtschatkan shores. Herrings and other small fish abound on the sea-coasts. All the rivers abound in salmon, trout, starlet, sturgeon, and other choice fish.

What winged game?

Wild ducks, geese, swans, water-hens, woodcocks, and partridges. Among the birds of passage are the polar goose and *anus glacialis*. The albatross is frequent in Behring's Straits, and around the Aleutian Islands.

What insects?

The bee is not found in Siberia; but musquitoes and bugs are exceedingly troublesome throughout all Asiatic Russia.

What has been remarked of Siberia as to animals?

That whereas America is interesting in the number and variety of its animals, there scarcely appears either among the quadrupeds or birds of Siberia, one genus which is not common to the European zoological region.

What are the vegetable productions of Siberia?

The oak, the hazel, the elder, and the plane, cannot stand the cold of a Siberian winter; they disappear in the neighbourhood of the Uralian Mountains, and on the banks of the Tobol. The lime and the ash cease about the Irtysh; the pine, which in Norway reaches the parallel of  $70^{\circ}$ , does not in this country pass that of  $60^{\circ}$ . The silver fir goes no further than  $58^{\circ}$ . The great Siberian rivers, however, are skirted with thick forests of elders, willows, elms, maples, white and black poplars, aspens, pines, and Siberian cedars. Siberia neither produces apples, nor pears; the *pyrus baccata*, or wild pear of Daouria, yields only a tasteless fruit; and the *pyrus prunifolia*, or Siberian crab, has nothing to recommend it but its extreme beauty. Berry-bearing shrubs, however, are numerous, and agreeable preserves and drinks are made from them.

In western Siberia, on the Obi, agriculture disappears about the 60th parallel. In the eastern part of it, grain has not been found to ripen, either at Oodskoi, which is under  $55^{\circ}$ , nor in Kamtschatka, at  $51^{\circ}$ . Two-thirds of Siberia are destitute of grain. The culture of potatoes begins to supply its place. Common flax grows in several parts of the Ural; hemp grows as far north as  $55^{\circ}$ ; hops are in great abundance.

Is Siberia rich in minerals?

Siberia has been celebrated from an early period, on account of its rich mines and precious stones.

What gold mines have been wrought?

The principal gold mines in Siberia, are those of Berezof, in the district of Catherinenberg, on the east side of the Uralian mountains. The gold occurs either pure or disseminated through iron pyrites, forming what is called the pyritious ore of gold. Five English pounds weight of gold are obtained from 1250 stone weight of the crude ore.

What are the principal silver mines?

The most considerable silver mines are those of Kolyvan, Nertchinsk, and Schlangenberg. The silver occurs in a native state, more frequently in the state of ore, as silver glance, red silver ore, hornore, or muriate of silver,

Where has platina been found?

To the east of the Urals, this valuable metal has been found in such quantity that it is now coined; the coins containing a certain proportion of silver.

What copper mines are in Siberia?

Rich copper ores occur in the Uralian, and also in the Altaian chain. The prevailing ores in these mines are red copper ore, and red oxyde of copper, and green and blue malachite.

What iron mines are there?

Iron abounds in Siberia, but hitherto few considerable mines have been established in this division of the Russian empire.

What lead mines?

Although galena abounds in Siberia, hitherto but few mines of lead have been opened.

What gems and ornamental stones?

*Diamond*, the most precious of all, has been lately found in Siberia, but not in considerable quantity. The most frequent of the gems are *topaz* and *beryl*, the true emerald has not been met with. The *Siberian aventurine* is a variety of quartz rock, with disseminated scales of mica, which, when polished, has a beautiful appearance. The red tourmaline or *rubellite* is a very beautiful mineral found at Sarapulka, not far from Murzinisk. *Blue* and *green felspars* are met with in different places, and the *lazulite*, or lapis lazuli, is met with around the Lake Baikal. The elegant *agates*, *cornelians*, and *calcedonies* of Siberia, are well known, and the rock chrystals with green tourmaline and rubellite embedded.

What manufactures have been established in Siberia?

One of the most magnificent iron founderies in the world, is established at Ekaterinenberg, where bar-iron, cast-iron, steam-engines, and immense quantities of cutlery are annually produced. There are likewise extensive iron works at Barnaoule and Nertchinsk. Woollen cloth, linens, and glass are manufactured, at Telmink.

The cloth is employed in clothing the Siberian troops. The linen manufactured here is also chiefly used in the army. Since 1822, good chrystal has been manufactured at Telminsk. A powder manufactory was established at Kasan in 1778, which employs 700 men, and can deliver 42,000 poods, or 1,512,000 English pounds of powder per month. The salt-works at Iletski, yield 4,000,000 poods or 144,000,000 lbs. of salt yearly, being the most extensive manufactory of this article in all the Russian dominions.

Distilleries are numerous throughout Russia; but all those on the interior side of the Ural mountains are the property of government, which has monopolized the sale of spirits. These distilleries are farmed, but are subject to the inspection of the governors of the provinces.

Name the two towns which form the solitary point of commercial intercourse between the two great empires of Russia and China.

Kiachta and Maimatchin. Almost all the principal houses in Russia have an agent at Kiachta, while the Chinese traffickers consist chiefly of temporary visitors, who are not even allowed to bring their families.

What do the Russians receive there?

The staples of China, tea, porcelain, silk, cotton, rhubarb, tobacco, with a variety of those little ornamental works in which that nation excels; in return for which, they give furs, skins, coarse cloths of various kinds, cattle and glass. The value of articles exchanged on each side is supposed to amount annually to, between £200,000 and £300,000.

What is the distance by the commercial route from Petersburg to Kiachta?

6,508 versts, or 4,315 English miles.

And from Kiachta to Pekin?

1,532 versts, or 1,015 English miles.

Is the trade on the frontiers confined to that town of Kiachta?

Yes, by a treaty concluded in the year 1727.

Is the inland trade by caravans, over such vast distances, at all to be compared to maritime commerce?

No, a vessel manned with fifty or sixty hands will transport as much merchandise from India to any given distance, as a caravan of 4,000 camels and 400 conductors, without counting their escort.

## CHAPTER XXVI.

### CHINESE EMPIRE.

What extent of the shores of this empire is watered by the Pacific Ocean ?

Throughout all the gulfs and straits, it is estimated at 3,600 miles.

Name the principal rivers.

The Hoang-ho or Yellow River, and the Yang-tse-Kiang or Blue River, are two mighty parallel streams, which water the whole extent of the central regions of China.

Where have these rivers their sources ?

These are almost unknown, in the heart of Thibet, and, from the summit, probably, of that loftiest portion of the globe.

What is the extent of the course of these rivers respectively ?

The course of the Hoang-ho, is estimated at about 1,800 miles, that of the Yang-tse-Kiang at 2,200 miles.

What do the Chinese call the Yang-tse-Kiang ?

"The first-born of Ocean."

What is its breadth ?

Above Nankin, it is from three to four miles, its banks populous, diversified by wooded mountains, and highly picturesque.

Name the principal tributaries to these rivers.

The *Yuenho*, the *Hoeiho*, and the *Hoay-ho*, fall into the Yellow river. The *Yalon-Kiang*, (itself 700 miles in length) the *Tchoo*, the *Ta-Kiang*, and the *Yuen-Kiang* are tributary to the Blue River.

Name the two independant rivers of great magnitude which China also possesses.

The *Peiho* in the north, which, after rising in Tartary, passes Pekin, and falls into the Yellow Sea ; and the

*Kankiang* in the south, which, after a course of nearly 700 miles, falls into the Sea of China, near Canton, thus giving origin to the immense trade of that city.

Name the principal lakes ?

The Tong-ting is said to be 300 miles in circumference, and covered with a numerous population who subsist by fishing ; the Poyang is thirty or forty miles in circumference, and surrounded by lofty granite mountains, down which vast torrents are continually pouring. On its banks are several large cities, and the tops of the hills are adorned with numerous pagodas. There are many others smaller than the Tong-ting, situated in the province of Hou-quang, which signifies "the country of Lakes," but none remarkable appear in any other part of the empire.

Describe the principal canals of China.

No nation can produce a parallel to the Yun-ho, or Great Canal, which extends in a continuous line from Pekin to the Yang-tse-Kiang, a distance of 500 miles, and by means of which an inland navigation is maintained, with the interruption of a single day's journey, between Pekin and Canton, a distance of not less than 1,200 miles.

How are these canals constructed ?

They are not constructed on the same artificial and scientific principles as those of Europe, nor composed, like them, of standing water, fed by reservoirs, elevated and lowered by locks. They are formed merely by turning aside, till they join those of another river, from which it is again continued, according as it is found necessary or practicable. They have, for the want of locks, generally a more circuitous course than European canals, and their waters, instead of being like them at rest, have a perceptible current.

What is the main feeder of the great canal ?

The Wenho, a river in the province of Shantung from which it descends on one side to the north, falling into the Pei-ho, near Pekin ; and thence, on the other side to the south, till it joins the Hoang-ho, or Yellow River, thence to the Yang-tse-Kiang, which great stream, with its tributary the Kan-Kiang, carries on the navi-

gation to the frontier of the province of Canton. It is here interrupted by a chain of mountains, to cross which, occupies a day's journey, when the traveller embarks upon another river, the Pe-Keaung, which carries him to Canton. Smaller canals, connecting the rivers and larger canals with each other, are innumerable; and there occur many bridges, remarkable for their magnitude, and the difficulties to be overcome in their construction.

Describe the climate of China.

A country extending from north to south, so far as China, must necessarily experience great variety of climate. The southern provinces, from their proximity to the equator, experience heats stronger than those of Bengal, but moderated by periodical winds; and the northern provinces, owing partly to their distance from the equator, and partly to the neighbourhood of the lofty mountains of Tartary, are extremely cold.

What is the mean heat of Canton?

About  $76^{\circ}$  of Fahrenheit.

What are the mean terms of the greatest heat, and greatest cold at Pekin?

The greatest heat is  $121^{\circ}$ , that of the greatest cold  $63^{\circ}$  below zero: the medium heat of the year  $55^{\circ}$ .

What is the character of the weather?

The winds are often extremely violent, especially at Pekin. June, July, and August, are the rainy months: it seldom rains in winter. No part of China is said to be unhealthy, a circumstance which may be owing in some measure to the state of cultivation in which the country has so long existed.

How is agriculture encouraged?

Of all the arts, agriculture is the most practised in China;—next to learning, it is the most honoured, and is considered as the basis of national prosperity. Every spring, a public ceremony is performed in its honor by the emperor, who lays aside his imperial robes and opens several furrows with the plough, in a field appointed for the purpose; which ceremony is performed on the *same day* by the viceroys of all the provinces.

Are the people industrious?



The extraordinary diligence of the peasantry, in cultivating the ground, is not equalled by any people in the world.

How do they prepare manure ?

No substance susceptible of putrefaction escapes them ; and innumerable old men and women, as well as children, are constantly employed about the streets, public roads, banks of rivers, canals, &c., in picking up offal of any kind that may forward the process of vegetation. To such an extent is this carried, that manure formed into cakes, is made an article of commerce, and sold to farmers, who, however, do not use it, in a compact state. Great care is also taken in transporting soils, and tempering them by mixture with those of an opposite character, as sand with a thick and adhesive clay, and marl with soils that are too light.

What chiefly renders necessary these arts of procuring manure ?

The deficiency of cattle, which leaves the supply too scanty for the very numerous population.

Is this manure applied to the rearing of grain ?

But seldom ; irrigation being sufficient for that, and the manure is reserved for the purpose of procuring speedy and successive supplies of culinary vegetables.

How are these produced ?

The seeds are steeped in liquid manure before they are sown, and liquid manure is from time to time applied to the roots of the plants.

What description of cattle have they in China ?

The Chinese oxen are of the humped kind, and appear to be of two breeds. One is equal to the smaller British race, with very short horns bent back, and the colour of the hide frequently white, the other or dwarf Zebu, is so wonderfully small as not to exceed the size of a hog ; it is commonly greyish white, with or without, very little horns. The pigs also are proverbially small.

What other animals has China ?

China has scarcely any not common to other countries. Elephants are common in the South of China ; and the unicorn rhinoceros frequents the marshes in Yun-nan and Kwang-see. The lion is said to be unknown in China, but what is there described as the tiger, is sup

posed to be the maneless lion. Monkeys are common in some parts. The musk-deer is among the most valuable of the Chinese quadrupeds; the buffaloes are usually grey instead of black, and the pigs there are much more cleanly than those with us.

What birds are the most remarkable?

These are not well known even to the naturalists, and naturally scarce where there is so much cultivation. The pheasants of the interior are magnificent birds, of which, in the northern provinces, there are said to be four species. Three of these species have been long domesticated, these are the Ring, the Golden or Painted, and the Pencilled, pheasants. The Superb pheasant was only known until lately, by drawings, but the writer of these pages, saw one alive when last in England. Much value is set on the Mandarin duck.

What fishes?

Besides those common in Europe, the Chinese have many unknown there, as the *sho-kyu-yu* or "fish in armour" (*tetradon*) which tastes like veal, and is covered with spines; a kind of cod caught and salted on the shores of Fo-kyen; haiseng, an unpalatable kind of blubber (*medusa*) eaten by the common people; and the kin-yu or "gold fish" is a native of a Chinese lake, and, as with us, a constant ornament of the ponds of their pleasure grounds. It was brought to England in 1611.

Describe the Chinese method of hatching the spawn of fish, and thus protecting it from those accidents which ordinarily destroy so large a portion of it.

The fishermen collect with care, on the margin and surface of the water, all those gelatinous masses which contain the spawn of fish. After they have found a sufficient quantity, they fill with it, the shell of a fresh hen egg, which they have previously emptied, stop up the holes, and put it under a sitting fowl; at the expiration of a certain number of days, they break the shell in water warmed by the sun. The young fry are presently hatched, and are kept in pure fresh water till they are large enough to be thrown in the pond, with the old fish. The sale of spawn for this purpose, forms an important branch of trade in China.

What are the principal insects?

The insects are numerous and splendid. The common sorts are put into little deal boxes, well preserved, and sold to Europeans at the factories. The Chinese lantern fly emits a strong phosphoric light from a long trunk-like snout. The *Bombyx Atlas F.* is one of the largest moths in the world, measuring full eight inches from one tip of the wing to the other. White wax insect (*Cicada limbata*) furnishes by its larva a substance which becomes as firm as bees-wax and is not only in high estimation throughout China as a medicinal drug, but when made into candles is reckoned superior for that purpose, to bees-wax. The *silk-worm*, now cultivated in Southern Europe, is said to have come originally from China, and there appears to be other species capable of producing silk cocoons of nearly equal value. The singularity of this people is likewise remarkable in their fondness for beautiful insects; little cages, with living specimens of shining and splendid beetles (*Buprestides*) and of chirping Cicadas, being exposed in the markets, and hung up in the drawing-rooms for the amusement of the wealthy.

What animals are used in tillage?

Chiefly oxen in the north, and buffaloes in the south.

On what are they fed?

On chopt straw and beans.

Are there many?

No, these animals are few, they are supposed to occupy too much ground, and are in general avoided.

What are the principal objects of Chinese cultivation?

Grain,—rice chiefly is raised in the southern provinces, while wheat supplies its place in the north; but the species of vegetables which are cultivated for food are almost innumerable. A kind of *brassica*, called *petsoi*, or white herb, resembling the coss lettuce, is cultivated in great quantities, and much relished as food. It thrives best in the northern provinces, where it is salted for winter provisions, and carried in that state towards the south. In some places Indian corn and millet are grown. Tobacco is also an object of culture, but instead of being cured in houses as in America, it is al-

ways cured in the open air. The annual cotton plant is also grown, but not in sufficient quantities for the use of the inhabitants, a great quantity is therefore imported from Bombay.

What are the methods of sowing grain in China ?

The Chinese are too sparing of their grain to sow it in the broadcast way, besides, they are convinced that by drilling, they procure much more luxuriant crops. Every kind of grain, therefore, is either sown in drills, or dibbled. The drills run generally north and south, as that is supposed to be the best direction. The fields are not laid out in ridges, but every where present a level surface.

What is their economy with regard to water ?

Irrigation, or the watering of ground, which in Europe is confined chiefly to meadows, is in China applied with care in all their processes of cultivation.

When the water descends from a lofty situation, it receives the requisite direction by proper channels prepared for it. When the land to be irrigated is higher than the reservoir, the difficulty is greater. For raising the water various contrivances have been adopted, sometimes it is raised by a species of chain pump, of a very peculiar construction. They inundate the crops of rice as soon as they are sown. This is done twice a year, and two crops are in general raised annually, without intermission or rotation. The highest mountains are formed into terraces, so constructed as to retain the requisite quantity of water, and allow what is superfluous to pass ; and reservoirs are formed on the summits. In other places dams have been made in vallies to retain vast reservoirs, from which a regulated supply is drawn off to irrigate cultivated lands, often at considerable distances.

With all these appliances, and the great encouragement to agriculturists, how happens it that they are not able to supply the wants of the nation, as seldom do three years elapse in succession without a famine in one or other of the provinces ?

*This frequent recurrence of scarcity may no doubt be partly ascribed to the circumstance of China being sur-*

rounded by mountainous and barren countries, from which it can draw no provisions in an unfruitful season, but which it is rather obliged occasionally to supply; to the want of foreign commerce, which prevents the importation of grain in the event of deficiencies; to the destruction frequently occasioned to the crops by droughts, or inundations;—to the great quantity of grain, especially of rice, which, in spite of the existing laws, is daily employed in the distillation of rack, and other spirituous liquors. But the principal cause of these scarcities is to be sought in the immense tracts of land which are suffered to lie waste, and in the want of enterprize and skill in the Chinese cultivation. The accounts of the wonderful fertility of the soil, and of the care of the husbandmen to root out any hedge or tree, so that not a foot of ground may be lost, and of the mountain sides being cut into terraces, are no doubt true in the immediate neighbourhood of towns and villages; but, partly from the dread of plunderers, and partly from the want of cattle to transport the manure and produce, the more distant lands are almost entirely useless and unproductive, so that it is estimated, one fourth of the whole country consists of lakes and swamps that are wholly uncultivated.

What are the chief vegetable productions of China?

All the fruits common to the tropical and temperate zones, but some of them do not succeed well. The apples, grapes, and pomegranates, are very indifferent: olives, though abundant, are gathered for eating, but not for making oil: a wild apricot, however, which flourishes in bleak tracts and a barren soil, is much used for that purpose. The oil is expressed from the kernels, and the stones are consumed as fuel. There are lemons no bigger than walnuts, and large oranges with a large solid pulp. There are also some fruits and vegetables peculiar to China. Of grain, rice is the staple produce; then barley, and after that wheat; especially in the north; buck-wheat, millet, maize, pease, beans, and other vetches, are the other kinds of grain and pulse *most cultivated*—sugar-cane, cotton, hemp, linseed, tobacco, indigo, mulberries, varnish trees (*Rhus vernix*).

camphor, ginseng, tallow trees, and cinnamon, are among the trees and shrubs most common in the fields and gardens. But the most remarkable among the vegetable productions of China is the tea-plant.

Where, and how is this cultivated?

It flourishes on the hills of Southern China, chiefly between the tropic, and the latitude of  $30^{\circ}$ . It is a bushy shrub, somewhat resembling the rose or myrtle tree, and which shoots leafy branches almost from the bottom of the trunk. The plants occur wild, but when cultivated, they are set in rows, four feet from each other, and, for the convenience of collecting the leaves, are artificially prevented from rising beyond a certain height. Whether the black and the green teas be from plants of different species is a question with botanists, but it is known, that the black teas grow chiefly in Fokein, and part of Canton: the green in the more southerly districts of Kiang-nan, Kiang-si and Tche-kiang. They are raised in elevated and hilly districts, and generally in small compartments like gardens. The earlier the leaves are plucked, they are the more valuable and highly flavoured, though, of course, the produce is smaller. In black tea, a few leaf-buds plucked early in the spring constitute pekoe. The successive later pluckings, form the congou, souchong, and, lastly, bohea. Green-tea is similarly divided into gunpowder, imperial hyson, and twanky. The leaves are rolled into the usual form by being passed through the fingers of a female, and then dried on thin earthen and iron plates over a charcoal fire. The merchants arrive at the end of harvest, give it a second drying, separate the different qualities, and, after packing it in large chests, convey it to Canton.

What use do the Chinese make of tea, when it has lost its virtues by age, and is no longer fit for drinking?

They employ it in dyeing silk a brown or chesnut colour; a great quantity of old tea, destined for this purpose, is sent annually from China to Surat.

What is the amount of tea exported annually from China for the use of the world?

43,900 tons.

Is the sugar-cane cultivated in China?

It is cultivated on the same small scale as all the other articles; single proprietors cannot bear the expense of a mill on their grounds. The cane of China is taller and more juicy than that of the West Indies. The cane is boiled, and its juice expressed by migratory dealers, who bring machinery of a character very inferior to that used in our plantations, yet sufficient for its purpose.

How are Mulberry trees grown in China?

These trees, which are necessary for the production of silk, the staple manufacture of the empire, do not appear to differ from those of Europe. They are reared with the greatest care, in rows, ten or twelve feet asunder, and on beds of a moist loamy earth. They are frequently pruned or dwarfed, in order to make them produce young shoots with tender leaves, which are supposed to be much more nutritious than those upon older branches.

How are the silk-worms reared?

The insects are nursed in small houses erected in the heart of the plantations, in order to be removed from all noise;—for the Chinese have an idea that they will be injured even by the barking of a dog. After the silk is wound off, the aurelians become an article of food. That no ground may be lost, the intervals between the trees are planted with rice.

What is the character of the Chinese as a manufacturing people?

As a manufacturing people, the Chinese are also eminent. The fabric of porcelain originated entirely with them, and although the taste of their imitations in Europe has produced more elegant patterns, they are still unrivalled as to its whiteness, hardness, and the transparency of the colours; the materials of which they possess a peculiar art in extracting from a vast variety of animal, vegetable, and mineral substances. Silk, also, is a fabric which the western world has learned from the Chinese, and the silks of China are still unequalled as to richness, though in Europe they are considered too heavy;—and those of France and Italy are

preferred. That light and elegant cotton stuff which we call *nankeen* derives its name from that great Chinese city, and the cotton which grows in its neighbourhood which has that peculiar yellow colour. The Chinese ornamented papers, it is unnecessary to describe. Their lacquered ware would be highly distinguished, were it not here eclipsed by that of their Japanese neighbours. A number, however, of little ornamented trinkets and toys are made, with the simplest instruments, and by the hands of single individuals: yet, with a beauty which we in vain attempt to rival;—such as their ivory fans and baskets; their ornaments of tortoise-shell and mother of pearl; their silver filigree and lacquered cabinets, chests, &c. Their paper and printing are both good, and their ink, for some purposes, superior to the European. The *Kyen-cheu*, spun by an insect somewhat differing from the silk-worm, and abounding in the province of Shan-ting,—furnishes a thick rough material, resembling drugget, and much valued by the Chinese.

What is the character of the trade and commerce of China?

The external commerce of China, taking its extent into account, is considerable: but its internal is extensive. "It has been remarked," says Mr. Davis, "that raw produce of all kinds has generally found a better market in China, than foreign manufactured goods." It is rather in the necessities, than the superfluities of life, that they generally deal, and that great variety of climate within the empire, which makes the northern and southern provinces dependent on each other for supplies, renders the whole country at the same time independent of foreigners. The south provides the great staple of rice, as well as sugar; the east furnishes silk, cotton, and tea; the west, metals and minerals, and the north, furs and a variety of drugs, whose growth is unsuited to a warmer climate. Foreign trade is but barely tolerated by the Chinese government, for it is at variance with that jealous policy which draws a line of perpetual demarcation between China and the rest of the world. Internal commerce on the other hand, as it excites no apprehension of a dangerous rivalry, is ex-



navigated. Inland navigation has been carefully improved, so that the whole distance from Canton to Peking, an interval of nearly 17 degrees, and considerably more than 1000 miles, can, with the exception of one day's journey, be travelled by water.

The external trade is carried on principally by foreigners;—for every Chinese who obtains permission to go abroad for commercial purposes, is obliged to return within a limited period, or is treated as an alien if he exceed that term.

What do the Chinese trade in to Japan?

They carry to Japan rhubarb, jinseng, silks, catgut, sweet-smelling woods, leather, cloths, and sugar, and take back pearls, gold, copper, sword-blades, paper, and spanned ware.

What does their trade to Manilla consist of?

To Manilla they carry silks, embroidery, varnish, rugs, porcelain and tea; while birds-nests, dye-woods, pearls, and bullion, are the return.

Of what articles does their commerce with Batavia consist?

To Batavia they carry tea, porcelain, tutenague, copper, and drugs; and receive silver, tin, pepper, nutmegs, cloves, edible birds-nests, tortoise-shell and European goods.

What articles are brought to Canton from Cochin-China?

Gold, areca, and cinnamon.

From Malacca and Siam?

Tin, camphor, resin, birds-nests, ivory and rhinoceros horns.

What are the chief European powers trading with China?

The English, Americans, French and Danes, are the principal exporters, and until lately their shipping were confined to the port of Canton.

What were the chief articles exported by the East India Company to China?

Lead, tin, copper, furs, camblets, long-cloths, &c.; but the principal article was broad-cloth, the annual export of which, amounted in value to £100,000 ster-

ling. Specie has also flowed in an increasing current to China for many years past.

Name the two provinces from which the trade of China with India is principally carried on.

Calcutta and Bombay.

What are the chief articles?

Cotton and opium.

What other articles of traffic are furnished from the east-coast, and the islands?

Peckhuck, pearls, sandal-wood, pepper, betelnut, rattans, &c.

What trade is carried on between the Chinese and the Burman Empire?

An active trade is carried on, on the northern frontier of the Burman dominions, with China and other eastern states.

Name the chief emporium.

Banmo, on the Chinese frontier, and at Midai, four or five miles northward of Amerapura; merchants of Ava go to Banmo to meet the Chinese, part of whom, frequently as many as four or five thousand, come down to Midai.

What articles do the Chinese bring there?

Copper, orpiment, quicksilver, vermilion, iron-pans, silver, good rhubarb, tea, fine honey, raw silk, spirits, hams, musk, verdigris, dry fruits, and some fresh fruits, with dogs and pheasants.

What are the means of conveyance?

The Chinese travel on small horses, and mules, and are said to be two months on the road.

What kind of tea is sold by the Chinese to the Burmese?

It is black, made up in round cakes or balls, some of it is of a very fine flavour, and it is all of a very different description from any sold in the market at Canton.

What is the price?

One tikal, little more than a rupee, for one vis, or nearly four pounds.

Of what articles does the return trade with China consist?

Chiefly of cotton, ivory, bees-wax, with a small quantity of British woollens, chiefly broad cloths and carpets

What is the estimated quantity of cotton?

It is estimated at 70,000 bales of 300lbs. each, the greater part of it being cleaned.

Where is the cotton of Pegu sent?

To Chittagong and Dacca; it is the material of the fine Dacca muslins.

What other parts are supplied by the Chinese?

The Chinese junks supply the islands of Borneo, Sumatra, Java, and all the archipelago of the Indian Ocean.

What number of vessels are employed in this trade?

About three hundred of the larger trading junks, sometimes carrying cargoes valued at 20,000 dollars.

What is the estimated number of junks, throughout the empire?

About 12,000 sail.

What did the contraband trade in opium amount to in 1832?

It exceeded 15,000,000 dollars.

What happened soon after to that contraband trade?

That it was put down by a vigorous effort of the Chinese government.

Name the ports of China, thrown open to British merchants by the treaty of peace concluded in 1842.

Canton, Amoy, Foo-choo-foo, Ning-po, and Shang-hái.

Name the island ceded in perpetuity to Her Britannic Majesty, her heirs and successors.

The island of Hong-Kong.

Describe the situation of the city of Canton.

It is situated at the confluence of the Pekiang with the Taho, a much larger river coming from the west. Their united streams spread below this city into a broad estuary, called by Europeans, the Bocca Tigris, which extends about fifty miles in length, and twenty in breadth, to its junction with the Ocean.

What is the extent of the city?

It is about five miles in circumference; besides which, its extensive suburbs compose, as it were, another city. The great estuary of the Bocca Tigris also, is covered with floating mansions arranged in streets, the tenants of which have no home on land.

Why is Canton better known than other Chinese cities?

Because this city has long been the sole theatre of European trade.

## CHAPTER XXVII

### MANDSHOORIA, OR EASTERN CHINESE TARTARY.

Describe the limits of Mandshooria.

This extensive region, which forms the interval between China and Siberia, is bounded by Mongolia on the west, and Russian Daouria on the north-west; by the Eastern Ocean or Pacific, on the east; by eastern Siberia on the north, and by the sea of Japan, the kingdom of Korea, and the Yellow Sea on the south.

What is its extent?

It extends from the 118 $\frac{1}{2}$  degree to the 142nd degree of longitude, and from the southern port of Lyan-tong, in 40° N. latitude, to 55° N. lat. The greatest extent from W. to E. therefore, is about 1,100 English miles, and its greatest breadth 1,045 English miles. The superficial area is about 800,000 square miles.

What are the principal rivers?

The great river Amoor, after rising in Mongolia, traverses the whole of this province, receiving from the south, the large tributaries of the Usuri and the Songari.

What is the length of the course of the Amoor?

Including sinuosities, it is estimated at 2,280 miles, and its average discharge of water, per second, 298,800 cubic feet.

What is the extent of its basin?

900,000 square miles, or nearly five times the extent of the basin of the Columbia.

To what height is the Amoor navigable?

As far as Nerchinsky—a distance of 1,500 miles, for vessels of large burden. This river abounds with fish of various kinds, of which the sturgeon, in particular, *is found in matchless abundance and perfection.*

*What is the character of the mouth of the Amoor?*

It is concealed by a vast number of aquatic plants, but the channel, deep and still, presents no impediment to navigation, having neither rocks, nor shallows, and its banks are lined with magnificent forests. The *Swifend Pira* falls into the Sea of Japan, and is a considerable stream.

What are the principal mountains?

Mandshooria proper, is bounded on the west, north, and south by great mountain ranges, which separate it from Mongolia, Lyan-tong, Russia, and Korea. The chain which bounds it on the west is called the Siolki mountains, which may be denominated the eastern buttress of central Asia. The range strikes off from the Yablonnoi—or “Apple mountains”—towards China, and extends across the rivers Schilka, and Argoon to the Great Wall of China, being more than 1,000 miles in length. The central ridge between Mandshooria and Mongolia, is generally called *Mount Pecho* by the Chinese, and *Hamar Tabahan* by the Mandshoors. Mount Pecho is said to be 17,820 feet above the level of Pechelea. Its steepest side is towards Mandshooria. The southern range is a south eastern prolongation of the Siolki mountains, and extends eastward along the frontiers of Lyan-tong, and Korea, and thence N. E. to the Sea of Tartary. In other words, it forms the southern border of the basin of the Amoor.

What constitutes the difference between the configuration of the Asiatic Continent and the American?

That the chief elevations of Asia are in the centre, whereas, the elevated platforms of Mexico, those also of South America, and the general range of the Andes, skirt the shores of the Pacific.

What is the result of the central elevation of Asia?

That the grand rivers of Asia, flow in every direction, to the surrounding and subjacent regions;—hence all the rivers, not only of this eastern portion of Tartary, but those also of Russia, China, and India, flow from the same mighty sources,—the central mass of the Himalaya and its subordinate branches, presenting multiplied and successive combinations of all that is beautiful, magnificent, and sublime in nature.

Describe the climate of Mandshooria.

Though this extensive region is the eastern declivity of the great upland plateau, and, consequently, on a much lower level, yet the climate is remarkably severe, which is supposed to be in part owing to the want of inhabitants and cultivation to clear the ground of those immense primæval forests which cover its surface, so that the soil is never heated by the solar rays.

What is known of the soil and productions?

In such an extensive region, there is great diversity of soil and produce. Wheat, millet, and cotton, are grown abundantly in the province of Lyan-tong, which province, is also of much utility to China, from its pasture lands furnishing a vast number of sheep, cows, and oxen;—animals by no means abundant in China. Amongst the trees, are the pine, the cypress, the acacia, the willow, the apricot, the peach, and the mulberry. In the vicinity of Ningoota, oats are so abundant that they are given to horses instead of black beans—their food in the northern provinces of China. A species of millet called *maysimi* by the Chinese, is raised abundantly. Where La Perouse touched on that coast, there was no trace, however, of human cultivation,—no paths but those of the bear and the stag were found across the rank herbage nearly four feet high; yet the birches, the maples, and the medlar trees, rustled in the winds; the lilly, the rose, and the convallaria perfumed the meadow.

Who inhabited the coasts?

The Yupi Tartars, a tribe of fishers, so called by the Chinese, and who spend all the summer in fishing.

Are fish abundant?

Every stream that falls into the Amoor, swarms with fish, which indeed serve the poor natives, both for food and raiment.

What fish are caught in the Amoor?

That valuable fish—the sturgeon, abounds in the Oosooree and Amoor:—the Yupi call it the “king of fish.” They commonly spear the larger fish, and take the lesser with nets. These Yupi are unacquainted with agriculture, and sow nothing but a little tobacco.

What is the name of the north-western portion of Mandshooria ?

Tsitsicar, or Mandshoor proper, being the original seat of that conquering race.

Name the agricultural tribe of Mandshoors, who dwell to the north-west of Tsitsicar.

The Tagouris or Daourians.

What do they cultivate ?

Barley, oats and millet ; they also breed horses, dromedaries, bulls, cows, and sheep.

What kind of sheep ?

The sheep are very fine and large, their tails being above a span thick, and two long ; are all fat, and so very heavy that they cannot go fast.

What animals do the Tagouris ride on ?

Oxen ; they are also very expert archers, and their bows being esteemed the best in all Tartary, bear a high price.

What articles of commerce are produced in Mandshooria ?

Copper, iron, jasper, pearls and furs, and its mother of pearl, is of admirable quality.

Where are the pearls found ?

In the Song-pira, the Korsin-pira, and other streams, which fall into the Amoor ; likewise in other rivers which descend to the Nonnee and Songgaree, as the Aram and Nemer in the road from Tsitsicar to Merghen.

What articles form the most valuable part of Mandshoorian commerce ?

The furs.

What inhabitants are the most expert hunters ?

The Han-Halas, and the Solon Mandshoors.

What are the chief furred animals ?

The sable ermines, black foxes, and martins in the vast forest beyond the Amoor, and on the banks of the Chikiri.

How are these hunters clad ?

In short jackets of wolves' skins, with a cap of the same, and their bows at their backs. The finest furs are reserved for the emperor, who pays a fixed price.

Name the province immediately adjacent to China.

Kerin-oula, with a capital of the same name.

What is the most remarkable place in that district?

Zhehol or Gehol, the summer residence and hunting seat of the Chinese emperors, with superb and extensive gardens.

What are the chief cities or towns of Mandshooria?

Shen-Yang or Mookden is the capital, and was the residence of the Mandshoor princes before the conquest of China. Fong-wang-ching is the best and most populous city of the province, and enjoys a very great commerce, being the key to the peninsula of Korea. Lyan-yang is also a considerable city.

When did the present Mandshoorian family conquer China?

In the year 1644, and it is a problem worthy of solution, how a country ten times the area of Great Britain, and the major part of it in more southern latitudes, should be allowed to remain almost a tenantless waste, occupied by the beasts of the forest, in the very threshold of China, and how a few thousands of Mandshoor shepherds and hunters should still continue masters of 150 millions of industrious agricultural subjects.

Describe the eastern coast.

This coast does not at any point, face the open expanse of the Pacific. Nothing is needed, one may suppose, but emigration to, and colonization of, such a vast region, in order to clear the dense forests and cultivate a soil so well watered, and render Mandshooria another Germany; for Germany in the days of Cæsar was just what Mandshooria is at present,—a country of vast forests, and peopled by tribes of wandering hunters. It has parallel to it a chain of great islands, extending for about twenty degrees from north to south. The three greatest of these islands compose the empire of Japan, which is divided from Asia by a broad expanse of sea.



## CHAPTER XXVIII.

## JAPAN.

What is the extent of this peninsular empire of Eastern Asia?

According to the admeasurements of Hassell, 270,211 square miles.

What seas surround it?

The sea of Japan washes this monarchy on the S.W., the strait of Corea separates it from the peninsula of that name on the S.W.; and the strait of Vries, on the N.E., divides the Japanese and Russian Kuriles from each other.

Name the principal islands.

Nippon, by much the largest, is about 800 miles long; Kinsin, 150 miles long by 120 broad; Sikokf, 90 miles long by 50 broad.

The southern part of the large contiguous island of Jesso, comprehending all of it that is valuable and improvable, is completely colonized and possessed by the Japanese.

What is the general aspect of these islands?

They present a rugged and irregular outline, bristled with rocks, hills, and lofty mountains. Fusi, the highest of these, is covered with perpetual snow: several are volcanic; and every where they abound with mineral springs. Earthquakes have very frequently been felt, and, in 1703, the greater part of the city of Jeddo, with a vast number of its inhabitants, were swallowed up by one of them.

What are the chief rivers?

They are numerous, but not of great magnitude. The principal are the *Jedo-gawa*,\* *Odingawa* and *Fusigawa*, all in the southern part of Nippon; the *Teurin*, which falls into the Bay of Awari; the *Baninjawa* falling into the Bay of Jeddo; the *Sakgawa*, *Jodo*, *Ojin*, *Oomi* and *Aska*.

\* The word *gawa* or *gava* seems to signify "river," in the *Japanese language* as it does in the Celtic.

What is the principal lake ?

The only large one known to Europeans, is the lake of Oix, between Osaka and Meaco—said to be 50 leagues in length. The delightful plain which surrounds it, is rendered sacred by containing 3000 pogadas.

Describe the climate of Japan.

Japan is exposed to the extremes of heat in summer, and of cold in winter. The weather is at all times changeable, and about midsummer, they have periodical rains. Thunder is frequent, with tempests and hurricanes. Thunberg found the greatest degree of heat at Nagasaki to amount to  $98^{\circ}$ , and the greatest cold to  $54^{\circ}$  of Fahrenheit.

What is the quality of the soil ?

The soil of Japan is not naturally fertile, but has been rendered very productive by the industry of its inhabitants.

What are their modes of cultivation ?

They are generally similar to the Chinese. As in China, little ground is appropriated to the rearing of cattle, the same scarcity of manure exists, the same solicitude is exhibited to procure it, and it is applied in a similar manner. Every spot of ground is made productive ; and the terraced mountains exhibit an astonishing proof of what can be effected by human industry and perseverance when prompted by necessity.

What are the chief vegetable productions of Japan ?

The general crop is rice. Wheat is little used ; but buck-wheat, rye, sesame, and barley are grown. Beans, pease, cabbage, turnips, and a species of potatoes are plentiful. Among the produce may be mentioned the cotton-shrub, the mulberry tree, the camphor laurel, and the varnish tree. Wheat and barley are sown in the beginning of winter, and reaped in June ; rice in April, and is ripe in November. The progress of cultivation has left few forests, except on the mountains. The larger trees consist of pines, willows, laurels, palms, cocoas, cycas, mimosas, cypresses, and bamboos. The plants of *Japan* very much resemble those of China. The *tea-shrub* grows without culture in the hedges, and ginger, *black-pepper*, sugar, and indigo, are cultivated with great

success. Besides the sweet China orange, there is a wild species peculiar to Japan, the *Citrus Japonica*.

What animals are reared in Japan?

The cattle are still fewer in number than those in China, being reared solely for the purposes of ploughing and drawing carts: of sheep and goats there are none except at Nagasaki; the fleece being superseded by the abundance of cotton, and goats being considered enemies of cultivation. For the same reason, there are only a few swine, and these are almost confined to the island of Kiusin. The horses are small but very active. The Japanese make no use of the flesh or milk of their cattle; their animal food consists of fish and fowl; but vegetables are more generally eaten. Game is not plentiful; there are wild-geese, pheasants, and partridges, but very few wild quadrupeds. The Japan peacock is a distinct species from that of India, although about the same size. Among the domestic fowls of Japan, are two most singular races, said also to be inhabitants of the native forests: one is the crisped cock, having the whole of the feathers curled up in such a manner as to appear, at a little distance, like wool; its colour is usually white. The other is the silk cock, which presents an equally strange deviation from the usual course of nature; the webs of the feathers being so entirely disunited that the bird appears covered only with silky hairs;—this also is white: the flesh is considered so delicate as to exceed that of the best ordinary capon.

What are the mineral productions of Japan?

The precious metals, gold and silver, abound in the empire of Japan. The gold is obtained principally from a pyritical ore of copper, but every mine is under royal inspection, and only a certain quantity is allowed to be dug, that the metal may not be too much diminished in value. Smaller quantities are collected from alluvial soils of various descriptions. Gold is not exported; it is used in gilding, in embroidering, and for coining. The purest and richest mines are in *Sado*, the largest of the small islands adjoining Nippon. Silver is chiefly found in the province of Bingo, in the S.W. quarter of Nippon. The copper of Japan is unequalled by that

of any other country, and contains a large portion of gold. It is exported in large quantities by the Dutch and Chinese merchants; and besides being applied to many domestic purposes, it is coined into money of low value. Iron is scarcer than any other metal, but is furnished by some of the provinces, and seems to be in sufficient quantity for the use of the inhabitants, since they neither export nor import it. The Japanese form it into various kinds of tools, and sword-blades of exquisite temper. Amber is sometimes found; sulphur is plentiful; coal is likewise abundant. Agate, asbertos, steatites, pumice, and white marble, are among the products of these islands. Cinnabar has also been found, and a reddish brown *naphtha* is used in lamps.

What is the number of the population of Japan?

It is estimated at 20,000,000.

Are the men strong?

They possess great freedom and vigour in the use of their limbs, though in bodily strength, they are supposed to be much inferior to the inhabitants of the North of Europe. They have, for the most part, large heads, short necks and black hair.

What is the common drink of the Japanese?

A kind of beer made of rice: spirituous liquors are seldom used, and wine is unknown. Tea is used by all ranks and highly esteemed.

What is their military force?

The army of Japan, is said to amount in time of peace, to more than half a million, and, in time of war the number might be greatly augmented.

What are their arms?

Bows, arrows, sabres, and spears. Muskets are not in general use. The sabres are thick at the back, and about a yard in length with a slight curve; they are exquisitely tempered.

What kind of vessels have the Japanese?

They are flat in the stern, and incapable of withstanding the waves of a heavy sea; and though the *mariner's* compass is used amongst them, as well as among the Chinese, they are very awkward and ignorant sailors.

What commerce have the Japanese with the rest of the world ?

This empire has long ceased to encourage foreign commerce. The Chinese and the Dutch alone are permitted to enter their harbours, and even with regard to these, the strictest regulations are observed.

What are the imports of the Dutch ?

Coarse sugar, ivory, tin, lead, cast-iron, chintzes, Dutch cloth, wood for dyeing, and tortoise-shell, saffron, sealing-wax, glass beads, watches, and other trifles. From the Japanese they receive copper, and raw camphor. Only two ships are dispatched annually. These ships sail from Batavia in June, and return towards the end of the year.

What do they receive from the Chinese ?

Raw silk, sugar, turpentine, and drugs ; and in return are given, copper, lacquered ware, and other manufactured goods.

Is the internal commerce considerable ?

Commerce being thus confined entirely to the interior of the empire, is very active within that sphere. Every harbour is crowded with vessels ; the cities abound in shops ; and numerous fairs are held in different parts of the country, to which astonishing crowds resort. The roads are kept in a good state, handsome bridges of cedar well fenced, are made across the broad torrents, and always kept in the most perfect repair ; but canals have not yet been formed. The islands, indeed, are so mountainous as to preclude their use ; while the proximity to the sea renders them unnecessary.

What are the chief branches of the manufacturing industry of the Japanese ?

These are the same as those of the Chinese, viz :— silk, cotton, porcelain ; but none of them is carried to equal perfection. There is one process, however, that of covering their vessels and furniture with a rich dark varnish, and raising about it artificial flowers and ornaments, which derives its name from Japan, and in which that nation excels all others. The Japanese are well acquainted with the art of working metals, and particularly the fabrication of arms ; and also with the making of glass.

What fisheries are carried on by the Japanese?

Fishing seems a very extensive source of Japanese subsistence. Besides the species known in India, they have whales, which come down in large numbers from the Polar seas, and are caught, as in Greenland, with the harpoon. They are highly prized, less for the oil, than as articles of food: every part, the flesh, the skin, the intestines, even the cartilage of the bones, is boiled, roasted, fried, and eaten. The rocky coasts which surround Japan are covered with tortoises, crabs, oysters, and shell-fish of all descriptions, which are eagerly collected for food.

Describe the island of Nippon.

This island forms nearly 5-12th of the whole area of the empire of Japan, and is situated between  $33^{\circ} 30'$  and  $41^{\circ} 30'$  N. lat.—to the N.E. of Kiusin and Sikoko, and to the S.W. of Jesso. It is washed on the N.W. by the sea of Japan; on the E. and S. by the Great Ocean; and between its western and S.E. extremity is separated from Korea by the straits of that name. It is about 600 miles in length by 250 in breadth. Its shores are rocky and intersected by numerous bays, amongst which are those of *Jedo*, *Totomina*, *Ovari*, and *Osaka*. Near its N.E. extremity are situated Capes *Sangar*, and *Nambou*. Capes *Noto* and *Garmaley* are situated on the N.W. coast; and Capes *Ava*, and *Dum*, on the S. coast.

Where is Jeddo, the capital of the empire, situated?

At the head of a deep bay, on the S.E. side of the island, and at the mouth of one of the few rivers possessing any considerable magnitude. It is seven miles long and five broad, and contains many splendid palaces of the great lords, all of whom must reside in it for a great part of the year. These mansions are surrounded by wide enclosed courts, and extensive gardens. The palace is built of free-stone, and is five leagues in circumference, including a wide exterior area, occupied by the spacious mansions of the lords of the court. Its grand apartment, the "hall of the thousand mats," is said to be 600 feet long by 300 broad.

Where is Meaco?

Meaco is an inland city, and stands upon a plain about 160 miles S.W. from Jeddo.

Describe it.

This spiritual capital of Japan, is still the chief seat of polished manners, refined arts, and intellectual culture. The finest silk-stuffs, flowered with gold and silver, the richest varnishes, the best painted papers, and the most skilful works in gold and silver and copper, are here manufactured. It is likewise the centre of literature and science, and most of the works which are published and read in Japan issue from its presses. It is calculated that there are, in and around Meaco, not less than 3893 temples, served by 37,093 *Suikku*, or priests. The lay inhabitants, according to the last enumeration, were 477,000, and the ecclesiastical, including the court, 52,000 ; making in all 529,000.

Name the other towns of importance.

*Osaka*, at the mouth of the river on which Meaco is situated, is a flourishing sea-port, intersected, like Venice, by numerous canals, which are crossed by bridges of cedar. *Matsmai*, the capital of Jesso is supposed to contain 50,000 souls. Nagasaki, in the island of Kiusin, is a large industrious trading town, containing sixty-one streets. At this interesting point, where alone the empire of Japan comes in contact with any European nation, the small adjacent island of Dezima, separated from it only by a narrow channel, is the spot where the Dutch are allowed to carry on their scanty commerce. They have here a space of 600 feet long by 120 feet broad, on which they have erected several large store-houses, and rendered them fire-proof. Dezima is to the Dutch a complete prison ; the gates of which are locked every night, and a guard set over them. Buried in this dungeon, and ignorant of all that is passing in the world, the spirit of commercial enterprize still animates the European inmates, and a contraband trade is carried on to a considerable extent, even in face of such precautions.

## CHAPTER XXIX.

## KOREA, LOO-CHOO, &amp;c.

What are the boundaries and extent of the peninsula of Korea?

This large peninsula has the sea of Japan on the east, the gulf of Peking, or the Kang Sea on the west; Mandshooria on the north; the Chinese sea on the south; and the province of Lyantong, now called Quantong, and Fongthyen, on the north-west. Its extent from north to south is about nine degrees, or from  $34^{\circ}$  to about  $43^{\circ}$  N. lat., and its breadth is from  $8^{\circ} 10'$  to  $14^{\circ}$  E. long. of Peking. Its length from north to south is therefore about 620 miles; and its breadth across the neck, where it joins the main land, nearly 300, and, towards the southern extremity, 260 miles.

What did Captain Basil Hall discover on the Western coast?

That what was once supposed to be the main land, consists of an almost innumerable archipelago of small islands. From one point, that navigator counted as many as 170 in different clusters.

What is the state of these islands?

They appeared to be all inhabited and cultivated, wherever cultivation was practicable.

What is the usual magnitude of these islands and the straits between them?

Few of these islands exceed 3 or 4 miles in length, and the intervening channels were from 1 to 4 miles in breadth.

What was its former boundary on the north-west?

It was formerly parted from Lyantong by a strong wall, not much inferior to that of China; but part of this was, in a great measure, destroyed by the Mandshoors in their irruptions into that peninsula, which was one of their first conquests.

What number of cities does Hamel state to be in Korea?

360 cities and towns, besides hill forts.



Name the chief province.

*King-hee*, or "province of the Court," which lies in the centre.

Name the capital.

*King-ki-tao*.

What are the principal mountains of Korea?

A long range called *Chim-Tai*, runs from north to south through the peninsula, skirting its eastern side, on the shore of the Japanese sea.

What is its medium altitude?

4776 feet.

In what direction is the general slope of the interior land?

To the west, or towards the Yellow Sea.

Are the coasts of easy access?

No, they are said to be rocky and of difficult access.

What bays are known to afford good harbours?

On the west side of Basil Bay is a safe and extensive harbour; and amongst the numberless islands off the coast, there are bays and harbours in which all the navies of the world might ride in perfect security.

What rivers are known to Europeans in this region?

There are but two,—the *Yaloo-Keaung*, and the *Toomen-keang* as they are called by the Chinese, or by the Mandshoors—*Yaloo-Oola*, and *Toomen-Oola*.

Where do these rivers rise?

In the great snowy mountain in the northern part of Korea, called by the Mandshoors *Amba-shang-gan-alin*, "the ever white mountain."

What is the direction of these rivers respectively?

The *Toomen* runs to the east, and the *Yaloo* to the west, the former falling into the Yellow Sea—and the latter into the Sea of Japan. They are both large, deep, and rapid streams.

What is the climate of Korea?

In the northern or continental part, the cold is long and severe, though it lies in the latitude of Italy. The snow falls in such quantities there, that it is necessary for the inhabitants to dig passages under it, in order to go from one house to another. Even in the peninsula.

itself the frost is so severe, that, by the end of November, at King-kee-tao, the capital, the river was frozen over, and 300 loaded horses passed over it.

What are the natural productions in Korea ?

Korea is said to possess gold, silver, lead, iron, topazes, and rock-salt. The mountains in the north are covered with vast forests ; and the soil of the peninsula is said to be fertile, and well cultivated, and to produce abundance of wheat and rice, with fruits of all sorts, and in the southern parts, two annual harvests. The northern part is barren, mountainous, and thinly inhabited, producing no other grain than barley, which the inhabitants make into a coarse bread.

What domestic animals are reared ?

In the southern parts, besides abundance of every species of agricultural, and horticultural produce, large herds of great and small cattle are reared. Domestic fowls, wild-fowls, and every species of game abound. The pheasant is a native of the peninsula of Korea, and the inhabitants have a species of riding ponies not above three feet high.

What wild animals are found ?

In the northern parts, sables, martins, beavers, deer, wild-boars, and bears occur. In the south, reptiles are said to abound ; and in the rivers, that dangerous amphibious reptile, the Kai-man, some of them, according to Hamel, from 30 to 40 feet in length.

What articles of commerce are produced ?

Of these, little is known. Silk, flax, cotton, and other commodities of that kind, are produced in the peninsula. The natives are said to make a very white and strong paper from cotton. They also make fans, and painted paper for ornamenting rooms, also very fine linen. They carry on a small commerce with China and Japan.

What is the form of government in Korea ?

The Korean government has always been monarchical and despotic, and the monarch is the sole hereditary landed proprietor, as all the lands hold of the crown. The royal revenue is one-tenth of the agricultural produce, and some duties levied on imports and exports.

What is the character of their army ?

It is numerous, but it is furnished with bad muskets, and would not be formidable to Europeans.

What is the number of the population ?

It is unknown, but it has been vaguely estimated at 3,000,000, a small number for a region half as large as Asia Minor.

What is the language of the Koreans ?

The arts and letters of China have been, to a great extent, imported, and Korea has the same written language, though its spoken one is entirely different.

Where is the island of Quelpaert ?

About twelve leagues south of the peninsula ; it is distinguished by its lofty mountain, beautifully covered with cultivation.

Where are the islands of Loochoo ?

These islands form a sort of chain, extending from Kiusin, the most southerly of the great islands of Japan, to the island of Formosa.

What is their number ?

They are in all 36, subject to the same government.

Are they fertile ?

These islands are fertile and populous, with the exception of Kik-kiai, which, however, contains forests of very large cedars.

What is the extent of the greatest of these islands ?

Loochoo, the largest, is about 50 miles long, and from 12 to 15 broad. At the south end is the capital, *Kien-ching*, which has a sea-port named Napakiang, at a distance of five miles. The king resides in the neighbourhood in a palace called Cheoole.

What is the position of Kien-ching, as determined by the officers of the "Alceste?"

It is in latitude  $26^{\circ} 14'$  N. and in  $127^{\circ} 52' 1''$  E. long. at the S.W. point of the island.

What is the climate of Loo-choo ?

It is one of the most propitious in the world :—refreshed by the sea-breezes, which blow over it at every season of the year ; it is free from the extremes of heat and cold.

What are the vegetable productions ?

Nature has been bountiful in all her gifts to that favoured country. Such is the felicity of its soil and climate, that vegetable productions, very different in their nature, and generally found in regions very distant from each other, grow here side by side. Not only the orange, and the lime, but the Indian banyan, and Norwegian fir, the tea-plant, and sugar-cane, all flourish together. It abounds in rice, wheat, peas, melons, pine-apples, ginger, pepper, camphor, dye-woods, silk, wax, and salt; it also yields coral and pearls.

What are the animals?

These are oxen, sheep, horses, deer and winged game. Almost the whole animal creation here is of diminutive size, but all excellent in their kind; the bullocks seldom weigh more than 350 lbs. but are in fine condition, and the beef very fine; their goats and pigs are reduced in the same proportion,—their poultry forming the only exception. Even the human inhabitants are of diminutive stature, the average height of the males not exceeding five feet two inches, and the women being of corresponding stature. They are said to be a cheerful and happy people.

Name the other great islands, appendages to China.

Formosa and Hainan are large islands, the latter being 190 miles in length, and 70 in breadth.

What are the harbours in the island of Formosa?

There is only one harbour on the west coast. The eastern coast is an unknown territory.

To what part does the name "Formosa," or *fair*, apply?

To the western part only, which is finely diversified and watered by numerous rivulets.

What Europeans formed settlements here?

First the Portuguese, and then the Dutch; but both are now expelled.

What is the character of the eastern part of the island of Formosa?

It is rugged and mountainous, occupied by races almost *savage*, who live by hunting, sleep on leaves, have scarcely *any clothes or furniture*, and tattoo their skins like the *rudest of the south sea islanders*.

Describe the island of Hainan.

Hainan is separated by a narrow channel, from the western extremity of Quang Tong. Though in view of vessels going to Canton, it is little known, or visited. The interior is mountainous, but a great part of the island is moist and unhealthy.

What smaller groups of islands occupy the seas adjacent to China?

To the eastward of Formosa is the *Hat-chi-ko-matchi* group, inhabited by as gentle and civilized a race as those of Loo-choo. The Pang-koo (Pescadores, or "Fisheries") between China and Formosa, are remarkable for their sterility and good harbours. The Haetan group, although situated at a considerable distance out to sea, are exceedingly fertile, but nevertheless are inhabited by industrious farmers and fishermen. Me-cheo is said to be a very delightful spot.

Along the coast of Tche-Kiang extends the almost numberless group of the Tchusan Islands, of which, in a sail of 60 miles, 300 have been discovered. They are small, verdant, cultivated, and rising from the sea in a conical shape. One of them, called Pootoo, is described as a perfect paradise, and as being occupied by a body of 3000 monks, who have 400 temples with houses and gardens attached to them.

Are there good harbours among these islands?

There are many fine ports, and the channels between them are crowded with almost innumerable vessels, carrying on a commerce, of which the centre is at Ning-po, on the opposite coast, five leagues up the river Tahea, and on its right bank.

What is the extent of the great Tchusan island?

It is about 40 miles in length and 20 in breadth; it is highly cultivated.

Name the capital.

Tinghai, which is intersected by canals resembling Venice, on a small scale, and presents a crowded scene of busy industry. When the British troops entered this place many of the public buildings excited great astonishment among those who fancied they were in a half barbarous country.

## CHAPTER XXX.

## HINDOO CHINESE STATES.

Describe the Indo-Chinese region.

This consists of an extensive maritime territory situated between China and India, throwing out wide peninsular tracts into the Indian Sea; separated by various seas, straits, and sounds, from its large islands. From Hindostan on the west, it is divided by the Bay of Bengal; while on the north, a range of imperfectly known boundaries separates it from China and Thibet. The main portion of this surface is situated between  $9^{\circ}$  and  $23^{\circ}$  of north latitude, and  $92^{\circ}$  and  $109^{\circ}$  of east longitude, excluding the large peninsula of Malacca, which stretches southward to within two degrees of the equator.

What is the general extent of this territory?

It covers a space of about 1000 miles square, and probably contains about 1,000,000 square miles.

Name the various kingdoms comprised within these limits.

Tsiompa, Cambodia, Tonquin, Cochin-China, Laos, Siam, Pegu, Arracan, and Ava.

What are the chief natural features of this great territory?

A series of mountain ranges extend from north to south, being branches from the mighty chain of Himalaya, which crosses Asia from west to east. Between each of these ranges a broad valley intervenes, generally of extreme fertility, and watered by a large river descending from the mountain frontier of China and Thibet. These vallies either form, or have formed, separate kingdoms; and though conquest occasionally unites several under one head, the boundary of hill and jungle, within which each is enclosed, soon affords to it an opportunity of shaking off the yoke.

What is the height of the mountains?

These being covered with extensive forests entangled with underwood, and filled with wild-beasts, have not

been well examined ; but those which form the northern frontier of Assam are exceedingly lofty, falling little short of the Himalaya, of which they are a continuation. Elsewhere they do not appear to be of the first rank as to elevation, as the highest of the central range bordering on Siam does not exceed 5000 feet.

What rivers water these regions ?

Rivers of the greatest importance ; the Menam, which waters Siam, is called by the natives " the mother of waters," and appears to rise among the mountains of Yunan. To the  $20^{\circ}$  degree of longitude it is navigable only for canoes, but on reaching Yuthia the old capital, it becomes a noble and navigable stream, and after a course of about 800 miles it enters the gulf of Siam by three channels, the most easterly admitting vessels of the first magnitude. The Irrawaddy, or river of Ava, appears a stream of nearly equal importance, and is navigable several hundred miles for large boats. Its upper course is still involved in mystery, and some assert that it is identical with the Saupoo, or river of Thibet. The Mekon or Dormai, in Cambodia, is also a noble river, which passes through Yunan, and is navigable in  $22^{\circ}$  or  $23^{\circ}$  N. at twenty-two days sail above its mouth. The other rivers are numerous, and many of them fall into the sea ; but a great number are tributaries to the three main trunks already mentioned.

Name the principal bays, or gulfs.

Those of Siam, Martaban, and Turon ; the coast being indented with several others of less extent.

What is the character of the climate and soil generally?

The whole of this vast region may be described as hot, moist, and woody, and it contains at least five great alluvial plains, not inferior in extent or fertility to those of Egypt or Bengal.

What is the effect of the joint operation of the great heat and humidity ?

It imparts to the vegetation a character of singular vigour and magnificence.

What are the chief vegetable productions ?

The mighty trees of the forests, have been styled the "*giants of the vegetable creation.*" The teak surpasses

the English oak for durability in ship-building. The iron-tree is quite common. The true ebony is indigenous in Cochin-China. In every district we find the sycamore, the Indian fig, and the banana; the latter of which, by the exuberance of its large leaves, forms a grove of itself. Other trees rival these in beauty or in stateliness, such are the *Bignonias*, the fan-palms, the *collophyllum*, which shoots up higher than the pine, the *nauclea orientalis*, and the *agallocum* of Cochin-China, the leaves of which display a rich purple on their inferior surfaces. Ginger and cardamums, grow wild on the banks of the rivers, or are cultivated in large plantations. The cinnamon tree grows abundantly on both coasts of the peninsula of Malacca, and is sometimes accompanied by the nutmeg, turmeric, betel-leaf, the long pepper, black pepper, several other kinds of pepper, and the *Fagara piperata* or long pepper of Java, are in common use. Among the different dye-woods, are distinguished the carmentine or *Justitia tinctoria*, which affords a beautiful green; three species of *royoc*, viz:—the *Morinda umbellata*, *carthamus*, and *gambogia*, all of which are yellow dyes: indigo, the red-wood of the *Lawsonia spinosa*, and sapan. The bark of the *Rhizophora gymnorhiza*, gives a beautiful red dye. The gum-resin called dragon's blood, seems to be the produce of more than one plant, among which are *Dracæna ferrea*, and the rotang, natives of Cochin-China.

What plants are subservient to industry there?

Among them is the *Pimelia Oleosa*, from which an oil is obtained, that enters into the composition of the Chinese varnish; the sumach of Java, another varnish tree; the *Croton lacciferrum*, from which is obtained the red lac, the produce of a sort of ant, which nestles on it, and separates this gum as its ordinary food; and finally, the suet-tree, the *Sebifera glutinosa* of Loureiro, the sapium or *Gluttier porte-suif* of Jussieu, the fruit of which yields a stiff grease, from which are made candles of an elegant appearance, but unpleasant smell.

What do these regions furnish to Europe for medical purposes?

*Jalap*, scammony, the bark of the *Nerium antidys-*



*entericum*, called codogapala, that of the *Laurus culiban*, the fruit of the *Strychnos*, nuxvomica, cassia, tamarinds, aloes, camphor, and castor-oil.

What other useful plants grow in these countries?

The sugar-cane, the bamboo, and spikenard, three useful plants of the family of reeds—the first two are in the marshes, the last, on the dry hills. The sweet-potatoe, the *melongena*, and the love-apple; melons, pumpkins, water-melons, and many other nutritious plants, enrich the plains. The banana, the cocoa, and the sago-palm supply liberally the wants of the inhabitants. The *Phyllodes placentaria* affords leaves used for wrapping up provisions, in order to heighten their colour and improve their flavour, and like the *Amoricum galanga*, are mixed with the fermented liquors obtained from rice, and from sugar.

What fruits are produced?

A great variety: the vine grows in the forests, but for want of culture, and the excessive heat, its fruit is much inferior to that of Europe; but to make up for this disadvantage, they have the orange, the lemon, the citron, the delicious mango, the pine-apple, the *litchi*, the *dimocarpus* of Loureiro, and the *euphoria* of Jessieu, the mangosteen, and a multitude of other fruits unknown in Europe.

What animals inhabit this region?

The camel and the ass are never seen, the horse rarely, and then nothing better in size than a pony, unfit for useful labour, or the purposes of war. The ox is not general; the sheep is unknown, and the goat is not frequent. In short, the most useful and familiar of the domestic quadrupeds of western Asia and Europe, give place here to the almost universal use of the elephant, the buffalo, and the hog.

What wild animals are found in the Hindoo Chinese countries?

Among them are the single-horned rhinoceros, the tiger, the leopard, the bear, many species of monkeys, the stag, the *oryx*, the *strepsiceros*, the civet, and the porcupine.

In what respect do the Hindoo Chinese countries

differ remarkably from Hindostan, and other countries which they resemble in fertility?

In the abundance and variety of their metalliferous products.

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## CHAPTER XXXI.

### LAOS, COCHIN-CHINA, SIAMPA.

Where is Laos?

Laos is entirely an inland region, watered by the Maykaung river, and bounded on the north by China; on the east by Tonquin and Cochin-China; on the south by Cambodia; and on the west by Siam and the Burman Empire.

Between what parallels of latitude is it situated?

Between the 16th and 22nd degrees of N. latitude.

What is the amount of population?

1,400,000.

Name the capital.

Mohang-Leng, a large city enclosed with palisades, upwards of 100 leagues north of Lautchang, and situate upon the banks of the Maykaung, which there runs over a rocky channel.

Describe the position and extent of Cochin-China.

Cochin-China extends from nearly the 8th to the 22nd degree of N. lat., and from the 103rd to the 108th degree of E. long. Its greatest breadth is at its northern and southern extremities, where, however, it does not exceed 180 miles: in the middle it is a narrow strip, bounded by the sea, and the mountains of Laos,

What is the extent of its coast?

1200 miles.

Name its conquered provinces.

Tonquin, Siampa, and greater part of Cambodiá.

To what circumstance did this empire chiefly owe its aggrandisement?

To the assistance the King Caung Shung obtained from a French missionary and fourteen or fifteen European adventurers, who, in 1790, enabled him to form a

fleet, discipline an army, and expel the usurpers of his possessions, and subsequently, also, to conquer Tonquin, a kingdom greater and more populous than his own.

Name the island on the coast which the French wanted to obtain possession of.

The island of Callão, not far from Turon Bay.

What are the advantages of Cochin-China?

That country is admirably situated for carrying on an extensive commerce with China, Japan, Cambodia, Siam, the Malay coast, the Phillipine Islands, Borneo, the Moluccas, &c.:—affording, in short, room there for another commercial empire like that which Great Britain at present holds in India.

What has been considered the best position for an establishment, either in a commercial or political point of view?

Turon.

What is the population of Cochin-China?

The lowest estimate is 10,000,000 of inhabitants.

Describe Cochin-China proper.

It is bounded on the north by Tonquin; on the east by the Chinese sea; on the south by Siampa; and on the west by a range of mountains very little known.

What is the nature of the coasts?

Sandy beaches are the prevalent characteristics. Where the shores are steep and mountainous, there are said to be no soundings.

What is the quality of the soil?

In many places three crops are said to be produced annually. In every part the face of the country is cultivated. There are no fences, nor carriages of any kind.

What are the chief articles cultivated?

Sugar-canes are plentiful, and sugar of an excellent quality is made; the refining of it is carried to a degree of perfection unknown in other parts of the world.

What is the process?

This is performed by intermixing layers of the sugar, one inch in thickness, with similar layers of the herbaceous part of the plantain tree.

Of what quality is the rice?

Of two kinds : one growing on a dry soil, the other on a soil that is wet.

What articles besides these are produced ?

Cotton, silk, pepper, cinnamon, coffee, areca-nut, betel, and tobacco. Vines are said to grow spontaneously, but the grapes are seldom made into wine. Amongst the fruits, are two very remarkable, viz. :—the *giacca* and the *durion*. Silk is so abundant that even the peasants and mechanics wear garments made of it when following their usual occupations. Whole plains are covered with mulberry-trees. Timber is abundant, of the finest qualities and most durable properties. Two kinds, one called the *aquila* or “eagle wood,” the other the *calamba*, are greatly sought after as a mercantile commodity over the east. Both proceed from the same tree, belonging to the genus *agallochum* ; but what is called “eagle wood” is procured from the tree when young, and the *calamba* when it is grown old. The fragrance and perfume of this wood is exquisite.\* In Japan it sells for 200 ducats per pound, it is used in eastern countries for various purposes ; amongst others, pieces of it are placed under the pillows of kings and other persons of high rank.

What minerals are found ?

Gold is found in the rivers, and several mines are open, from which that metal is procured in a state of great purity. Silver was formerly scarce, but owing, it is supposed, to the recent discovery of mines, it is now so plentiful, as to be the chief medium of exchange for foreign goods.

What articles are brought from the mountainous parts and exchanged ?

Gold-dust, wax, honey, and ivory, are exchanged for cloth, cotton, rice, and iron.

What is the state of the fisheries ?

The fisheries upon the coast are very productive, and the fish are of the rarest and most delicious kinds.

Describe the sauce they use called *balachiam*.

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\* It may be remarked that the most fragrant herb as yet found in the Australian interior bears the same name, viz. :—*Calomba*.

It is made of salt fish, macerated and steeped in water. This forms a sharp liquor not unlike mustard, and serves to sharpen the appetite to the rice, which they cannot eat without it, and for this reason they who can afford to do so, lay in large stocks of it.

Are the edible birds-nests found in Cochin-China?

The islands abound in the nests of the salangan swallow, or *hirundo esculenta*, so much in request among Chinese epicures.

Name the capital of Cochin-China.

Huế; the constant residence of the king.

Where is it situated?

About 372 miles S.S.E. of Backinh, and 470 E.N.E. of Siam.

What is its extent?

The new city is of a quadrangular form, the extent within the walls being upwards of five miles. It was laid out according to technical rules of fortification by the late king. The arsenal contains not only iron cannon, but much brass ordnance; shot and shells are manufactured in Cochin-China. The river Huế flows through the city.

Describe the position and extent of Siampa?

This district commences at the north-east point of the small Gulf of Siagon in  $10^{\circ} 30'$  N. lat., and terminates in  $12^{\circ} 13'$  N. lat., where it joins the division of Chang; having Cambodia on the north-west, and Cochin-China-proper on the N.E. This region extends along the shore above 140 miles from S.W., to N.E., and about 60 from S.E. to N.W., the inland boundary being the great chain of mountains, which, running N.E., and S.W. separate Cochin-China and Siampa from Cambodia. The coast is furnished with a number of good bays and harbours, the interior is almost unknown, as it is never visited by Europeans for the purpose of trade.

What articles are exported?

The only exportable articles are gold, purer than that of China, and Calamba wood, which they give the Chinese traders in exchange for tea, ordinary silk, china-ware and provisions.

## CHAPTER XXXII.

## TONQUIN.

Describe the extent and boundaries of Tonquin.

Tonquin, called also by the natives *An-nam*, is a large and extensive country, formerly independent, but at present comprehended in the Cochin-China empire. It lies between  $17^{\circ}$  and  $23^{\circ}$  N. lat., and  $101^{\circ}$  and  $108^{\circ}$  E. long., and is supposed to be 420 miles from north to south, and from 400 to 450 from east to west. It is bounded by Laos on the west; by China on the north; on the east by the Chinese sea; and on the south by Cochin-China proper.

Name the capital, and describe its situation.

It is named Bae-King, or Kee-ho, and is situated about 40 leagues from the sea, upon the banks of the great river Sau-koy, and in  $20^{\circ}$  north latitude.

Name the principal cities.

In this kingdom these are reckoned twelve in number, viz. :—*Bae-king* or Kee-ho, said to contain about 40,000 inhabitants; *Hauring*, 15 to 20,000; *Tranhanc* 10 to 15,000; *Causang* 7 to 8000; *Vihoang* on the river which passes through Tonquin, at the point to which the Chinese junks can ascend; and *Hunnam*, a town on the same river, containing about 5000 inhabitants and in which the Dutch had formerly a factory. Besides these there are six other towns containing from 6 to 7000 souls.

What are the principal physical features of Tonquin?

On the N. and W. this country is mountainous, abounding in woods, pastures, and mines. On the side next China, a range of high mountains runs along the frontiers, forming a natural boundary through which there is only one pass fortified with a high wall. The lower part of Tonquin is a level country: the principal part of the maritime provinces having been gained from the sea. It abounds with canals and dykes, and in this particular resembles Holland. According to tradition, the capital, which now stands 100 miles inland, was

finally founded on the sea-coast, which is probable, on the vast quantities of mud and sedimentary matter shed down by the inundations.

How is the rice cultivated in Tonquin?

This valuable plant is made to shoot in troughs scooped in the houses. It is then sown very thick in well-watered beds which are afterwards levelled as exactly as possible. It soon springs up; and in six weeks transplanted, stem by stem, into other fields. Women generally perform this work. In about three months from the time it is transplanted, it is ripe, and fit to be reaped. The land is raised in small ridges with furrows, filled with water between, so that those who are employed in reaping it, are up to the knees in water. The same fields which produce the rice, also abound with excellent and even beautiful fish, which live in the rows between the ridges.

Name the other objects of cultivation in Tonquin.

Maize is abundant, also different species of yams and starchy plants. Sugar-canes grow to perfection, and are the natives of it.

What fruits?

Bananas, plantains, pine-apples, guavas, passays, and bread-fruit, are every where found in perfection. The bread-fruit, called by the natives *begay* grows upon a tree with leaves like the laurel. The fruit appears in bunches like grapes, and each grain takes the appearance of a nut. Its shell is thin, rough, and opens easily. When ripe it is of a crimson red colour. This beautiful fruit is equally pleasing to the eye and to the taste. The dragon-egg is common in this country. The dragon-egg is large; the fruit of the size of a plum, of a pale green, or dead leaf colour, and is very delicious, but not wholesome, as it is of a heating nature. The *laca* or lacca is the largest fruit in the world, it weighs often 10 lbs. It grows from the body of the tree in place of the branches. The only European trees that thrive here are the plum, the pomegranate, the citron and the orange. The tea-plant is said to be plentiful, but of an inferior quality, probably from the want of careful cultivation. The bamboo is a most valuable plant in the

country. Besides making paper of it, they use it in covering houses, make pillows of it, and cut it into laths, used for boards and coverings. Even boats are made of it, and it is worked up into very handsome baskets and boxes of any size.

What domestic animals are reared by the Tonquinese?

Among these are oxen and buffaloes, which are only used for labour, the people never kill or eat them. The horses are small, stout, and active. There are no asses or sheep. Goats are not numerous, but cows and hogs are very plentiful. Poultry is plentiful everywhere. The inhabitants hatch ducks' eggs in ovens, by which they multiply these animals to an amazing degree.

What wild-fowl or animals occur?

Wild-fowl abound in the canals, rivers, and fields, and are caught in gins and nets, as the use of fire-arms is prohibited on pain of death. In the forests there are great numbers of stags, deer, and wild boars. Tigers are also numerous and of great strength, also wild elephants, of such strength, that they tear every thing to pieces, often laying houses in ruins, and killing the inhabitants. White ants are numerous and destructive. The birds are few in number. Peacocks, quails, a species of partridge peculiar to the country, and a few others comprise all. There are numbers of snakes and rats, which last are frequently eaten by the inhabitants.

By whom is the commerce of Tonquin at present conducted?

The Chinese conduct the principal part: formerly the Portuguese and Spaniards, Dutch, and English, had a considerable share; but for want of perseverance and prudence, the trade of Europeans with this country has been nearly annihilated.

What are the articles of interior commerce?

The nests, and fruit of the areca, fruits, cotton in the pod, spun cotton, linen, and cloth made from bark.

What do they export?

Raw or wrought silk, such as gauzes, programs, or strong stuffs, linen made from the bark of trees, which is a very fine and neat material; different works in mother of pearl and rattan, all kinds of small furniture,



bony, ivory, tortoise-shell, cinnamon, copper, cotton, and various other valuable articles. The Chinese take large quantities of salted ducks, which they preserve in a paste composed of pounded brick and salt. The exportation of rice is prohibited.

What do the Tonquinese receive in return from different nations?

They receive, but particularly from the Chinese, various medicinal drugs, fine tea, porcelain, fine silk stuffs, different kinds of linen, sugar powdered and candied, wheat and barley-flour, iron and copper kitchen utensils—iron, that of Tonquin being badly made and very brittle,—spices, cloves, cinnamon, nutmegs, and different dried preserves, hemp and flax—these articles being so scarce in Tonquin that the inhabitants are obliged to make their nets of silk—wax and cotton, glass-ware, iron-ware, small looking-glasses, telescopes, white glass-bottles, and glass or paste beads. From Europe, or the European settlements in the east, they receive tanned ox hides, which, as leather is very scarce, are in great demand; woollen stuff cloths, which are in much esteem; painted linens of India, broad linen, and cotton cloths. Every kind of European merchandise is in great demand; cutlery, clocks, maps, ointments, engravings, or prints, sell immediately. Articles for general use, and low priced articles, are preferable, in trading with this country, to more valuable goods. Tonquin is most advantageously situated for commerce, and great and general good would accrue to millions from an extended intercourse with Europe, particularly with Great Britain.

What is the population of Tonquin?

It has been estimated at 18,000,000, which probably exceeds the reality. It is calculated that one-tenth of the inhabitants of lower Tonquin live constantly on the water.

What diseases are prevalent in the country?

Leprosy is a common disorder, fevers, dysenteries, the yellow-jaundice, and the small pox. The water of Tonquin is generally unwholesome, and the summer heats bring on epidemic diseases, which always carry off multitudes.

## CHAPTER XXXIII.

## CAMBODIA.

Describe the position of Cambodia.

This country is the southern extremity of that long neck of land which lies between the two gulfs of Siam and Tonquin. It is situated between  $8^{\circ} 47'$  and  $15^{\circ}$  north latitude, and is bounded by Laos, on the north; by Cochin-China, and by Siampa, on the east; by the Chinese Sea, on the south-east; by the Gulf of Siam on the south-west; and by the kingdom of Siam on the west.

What are the chief physical features?

The frontiers towards Laos are formed by a long and natural barrier. *Tchampawa* chain runs from north-east to south-west, and terminates on the banks of the *Mei-nam*, *May-kang*, or *Cambodia* River. In general form this country resembles Egypt, being a very large valley, forming the basin of the May-kang river, which runs from north to south, and separates into a number of arms before reaching the sea, so as to form several large islands at its mouth.

Name the capital of Cambodia?

Saigong, 60 miles from the mouth of the River Donnai, which is one of the finest navigable rivers anywhere to be found.

What is the number of the inhabitants?

180,000, of whom about 10,000 are Chinese. There is a superb naval arsenal, formed under European direction, and which, from the very fine timber of the country, has produced 150 galleys of the most beautiful construction.

What other cities are known in Cambodia?

*Lowaik* was formerly the capital. This city is situated 300 miles up the river. It is 40 leagues south of the frontiers of Laos, and 60 leagues east of the Gulf of Siam. The inhabitants were estimated at 30,000. *Huysoum* is a city noted for its silk manufactures; and beyond it, is *Munkok*, a large commercial city on the frontiers of Laos, where the Lanjans and Cambodians meet to exchange their several commodities.

What is the character of the climate ?

It is said to be as fine as that of any other country within the torrid zone, the periodical winds passing over and refreshing every part of it. The thermometer in the month of October ranged from 80° to 85° in the shade at Saigong, and the rains were heavy and almost constant.

What does the land produce ?

The produce of this country is various and valuable. From the mountains the natives procure gold, copper, silver and iron, and from the forests a great variety of valuable drugs ; woods for building, for perfumes, and for dyeing, of which latter species the *cambogia guttifera*, is well known in commerce. They have rice of six different kinds, sugar, pepper, sago, cassia, cinnamon, areca, betel, tobacco, cotton, raw silk, indigo, and many other articles well adapted for a foreign market ; whisky or arrack is the common beverage of the country.

What animals exist there ?

Antelopes of various kinds, and deer, peacocks, pheasants and partridges ; water-fowl swarm in the creeks and rivers ; elephants, rhinoceroses, and tigers, abound in the woods, and are hunted for their ivory, horns, and skins. Several ineffectual attempts have been made by different European nations to open up a commerce with this country.

What is the number of the population ?

At least 1,000,000, but it cannot be ascertained accurately.

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## CHAPTER XXXIV.

### SIAM.

What is the situation and extent of the empire of Siam ?

The Siamese empire is bounded on the west and north by the Burman empire and the Chinese province of Yunnan ; on the east by the Cochin-Chinese empire ; on the south by that part of the Indian Ocean which is called the *Gulf of Siam*, and the newly acquired British terri-

ories on the Malayan peninsula. It may be generally described as extending from the 98th to the 105th degree of E. long., and from the 22nd to the 7th degree of N. lat.; or if we include the Malayan tributaries, even down to the 4th degree. The area, taking its widest limits, will amount to, at least 250,000 square miles.

Who are the dominant and most numerous race in Siam?

The people called *Thai*, whose proper country extends from the 7th to the 10th parallel of N. lat., and from the 98th to the 103rd of E. long.

What do the subject nations consist of?

Of six Malayan principalities, the kingdom of Laos; a portion of Cambodia, and a small part of the ancient Peguan dominions.

What are the natural limits to this region?

Being separated from Pegu on the W., by an extensive chain of mountains, and on the E. from Laos and Cambodia by another chain, this region may be considered as a wide valley extending between these two chains; but the mountains themselves, are little known, and cannot be particularly described.

What rivers water this country?

The chief, and, as it appears, the only river known to Europeans, is the *Menam*, or *Meinam*, that is "the mother of waters," which falls into the head of the Gulf of Siam, twelve leagues below Bangkok, the present capital. At the mouth it is a mile broad; and two miles above, it is 4,800 feet; opposite to Bangkok its width does not exceed 300 feet, and as far as the old capital, Youthia, it is not above 200 paces across. The Menam generally inundates the country in September. In December, the waters decline.

What is the climate of Siam?

The proximity to the equator must render it a warm country, but the heat is mitigated by the clouds, and by the heavy rains.

When is the rainy season?

It commences in April, and continues to the end of September. In May and June, the rain is almost incessant, and the whole country near any river or stream

is overflowed. The winds in March, April, and May, blow from the south ; in July, August, and September, they blow from the west ; in October, they blow from the west and north ; in November and December, they blow from the north ; in January from the east ; and in February from the east and south ;—thus making an annual circuit, and bringing with every revolution a change of seasons. The coldest season is during the months of December and January, but even then the heat is said to be as great as during the summer in France. The winter is dry ; the summer is distinguished by moisture.

What is the quality of the soil ?

Upon the banks of the rivers it is amazingly fertile, but agriculture meets with little attention.

What are the productions of the soil ?

Rice forms the principal crop—wheat is also raised on lands remote from inundation. Maize is cultivated only in gardens ; but peas and other vegetables are plentiful. Though the soil and climate would produce more than one crop, indolence or prejudice has confined the inhabitants to one only. The only European fruits found in Siam are lemons, oranges, pomegranates, and citrons ; but the number of native fruits is great. The forests of the north-western frontier of the kingdom supply teak in great abundance, besides lac and dye-woods.

What are the mineral productions of Siam ?

The dependent Malayan states, and the adjacent portion of the proper Siamese territory, are throughout rich in gold and tin. The latter likewise contains some of the richest iron-ores in the world, besides copper, lead, and antimony ; silver has been also mentioned among the metals of Siam.

What animals exist in Siam ?

The elephants are celebrated for their sagacity and beauty ; buffaloes and deer are plentiful, but horses are scarce, and appear to be of an inferior breed ; tigers, wild bears, and monkeys, inhabit the forests ; a small kind of poisonous serpent is plentiful ; crocodiles abound in the *Mainam*. All travellers speak in admiration of the brilliant plumage of many of the Siamese birds.

What is the number of the population?

It has been estimated at 5,000,000.

What are the chief cities?

The former capital was by the Portuguese called Siam, by the natives *Yuthia*. It contains no less than 300 temples. The streets are spacious, several of them have canals, over which are numerous bridges. *Bankok* is an ancient port, but modern capital, having been established for the seat of government after the capture and plunder of *Yuthia* by the Burmese. It extends along the *Meinam* river in  $13^{\circ} 40'$  N. lat. and  $101^{\circ} 10'$  E. longitude. The population is estimated at 412,000, three-fourths of whom are Chinese.

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## CHAPTER XXXV.

### BIRMAN EMPIRE.

Describe the boundaries of the Birman Empire?

The Birman empire is bounded on the north by *Assam* and *Thibet*; on the north-east and east by *China*, *Lao* and *Cambodia*; on the south by *Siam*, *Tavoy*, and *Arracan*; and on the west by part of *Arracan*, *Cassay*, and *Assam*, which are now interposed between its frontier and *Bengal*.

Name the three kingdoms comprised in the Burmese empire.

*Ava* or *Burma*, *Arracan* and *Pegu*.

What was its extent before the late war with the East India Company?

The Burmese dominion, extended from  $9^{\circ}$  to  $26^{\circ}$  N. lat. and from  $92^{\circ}$  to  $104^{\circ}$  E. long.; its length being thus 1,050 geographical miles, and its breadth 600; the contents in English square miles, being computed at 194,000.

What portions have been wrested from this extensive native government by the army under Sir *Archibald Campbell*?

The kingdom of *Arracan*, the province of *Tenasserim* and the districts of *Ye*, *Tavoy*, and *Mergaui*, amounting

posed, to 51,000 English square miles, by which  
 northern limits have receded from  $9^{\circ}$  to  $15^{\circ} 45' N$ .

the principal rivers.

*Salween*, the *Setang* and the *Irrawaddy*.

Do these rivers have their sources?

On the lofty ridges near Thibet, though, like the  
 the Indus, and the Nile, they may be said, in  
 language of the east, "to hide their heads in hea-  
 ven; no mortal has yet traced their beginnings."  
 A portion of the empire is supposed to be covered  
 by forests, in which the wild elephant and the tiger are  
 found.

Do lakes occur in the interior country?

Among the windings of the wild and lofty ranges,  
 numerous merable lakes, many of them so large as rather  
 to deserve the name of inland seas, which form the  
 haunts of immense flocks of aquatic birds, and abound  
 with various species of fish.

Do bays or arms of the sea are found on the coast?  
 The coast is broken, or indented by numerous arms  
 of the sea, or small bays, but there are only three har-  
 bours belonging to it, which are those of Martaban,  
 and Bassim.

What is the climate of these regions?

It is said to be more salubrious than that of Hin-

The extremes of heat and cold are seldom  
 reached; the seasons are regular, and the inhabitants  
 generally enjoy good health.

What are the chief vegetable productions?

Wheat and the various kinds of grain produced in  
 the north are here produced in abundance. Wheat is  
 white, and of good quality. Esculent vegetables  
 constitute a considerable portion of the food of the inhabi-  
 tants. All the tropical fruits are produced in perfection;  
 sugar-cane grows of excellent quality; also sugar-cane, cot-  
 ton, and indigo. Oak is not known in these countries, but  
 is supplied by the teak, which has, for many  
 years, been applied materials for the construction of vessels  
 in the dockyards of Rangoon, Madras, and Calcutta. The  
 same is the case in the northern parts.

What are the botanical productions?



These of the Birman empire, Siam, Cambodia, and the whole region distinguished by the name of India beyond the Ganges, are extremely similar. Besides the teak-tree already mentioned, the Birman territories afford the white sandal-tree, the ebony-tree, the sycamore fig, the Indian fig, the banyan tree, several kinds of palms, and many other trees whose wood is useful. Among the Birman plants useful in medicine or in the arts, have been enumerated ginger, and cardamum, turmeric, betel-pepper, black-pepper, and long-pepper, with several kinds of capsicum. The *Justicia tinctoria* dyes green; the *morinda*, the *umbellata*, gamboge, and carthamus, yield a yellow tinge. To these may be added the *Lawsonia spinosa*, the *Casalpinia*, the sappan, and indigo. The tamarind, the aloe, and the camphor-tree, are all products of the Birman territories; as well as the cinnamon, laurel, nutmeg, spikenard, and bamboo. The plantain, the cocoa-nut, and the sago-palm, grow wild;—vines are found in the forests, and their inferiority, it is presumed, is owing to the want of cultivation. Among the fruits may be enumerated the mango, the pine-apple, the paw-paw fig, the lemon, the lime, and the orange. The species of flowers are said to be very numerous and diversified, and many of them are described as joining the greatest beauty of colour to the utmost fragraney of perfume.

What are the principal animals?

The horses are of a small size, but vigorous and spirited. Elephants are found everywhere, but abound most in Pegu. The ichneumon, or rat of Pharaoh, is said to be peculiar to this country. Buffaloes are plentiful, but their flesh is never used for food, nor indeed any other kind of flesh, except that of game. Poultry is abundant.

What minerals occur in the Burmese territories?

Besides tin, iron, antimony, lead, arsenic, and sulphur, this region affords very fine amber, with many kinds of precious stones; among which may be reckoned amethysts, garnets, jasper, loadstone, marble, and rubies. The ruby is said to be almost as peculiar to the Birman territories as the true diamond is to Hindostan.



In Pegu, gold is found in the sand of the rivers, and in some places it is dug from mines ; it has even been supposed that this country is the Golden Chersonese of the ancients. In a mountain called Woobelootaun, near the River Kyen-dwen, there are mines of gold, silver, rubies, and sapphires, all wrought at the same time. The marble dug from the quarries, a few miles from Ummera-poor, is reckoned equal to the finest Italian ; but it is monopolized by government, and held sacred because the images of Godama are chiefly made of this material. The Birman empire also contains the celebrated wells which yield the petroleum oil, a species of coal-tar, also monopolized by government, and from which a large revenue is derived ; the average annual produce being estimated at 92,781 tons, valued at nearly £1,000,000.

What was the inference by Colonel Symes, Captain Trant, and others, who visited Burma, on inspecting the architectural remains and other antiquities of the country ?

That these regions must have been at former periods the seat of an empire far more populous, better skilled in the arts of civilization, and altogether more flourishing and wealthy than the present state.

What are the vegetable productions of the Birman empire ?

Rice, grain, cotton, indigo, cardamums, black-pepper, aloes, sugar, saltpetre, salt, teak-timber, stick-lack, *kuth* or *terra-japonica*, areca, nuts, dammer, fustic, sapan-wood, and earth-oil, honey, bees-wax, ivory, rubies, and sapphires.

What are the mineral products ?

Iron-ore is melted in Ava, where there are manufactories, in which swords, spears, muskets, or rather match-locks, knives, scissors, and carpenters' tools are fabricated. Copper, lead, gold, silver, antimony, white-statuary, marble, limestone, and coal.

What is the principal external commerce of the Burmese ?

In 1795 the quantity of teak and other timber imported to Madras and Calcutta, from the Burman dominions required a return, chiefly in India and British

cotton goods, amounting to the value of £200,000 ; and the trade has been progressively on the increase, as teak cannot be conveyed from the Malabar to the Coromandel coast, unless at so great an expense as to preclude the attempt. Before the late war the Birmans were beginning to be clothed in British fabric, and the merchants had pushed their enterprizes to Amerapoor, the capital. The teak forests are said to be of the most extensive description. The sugar is manufactured by Chinese, and is white and of good quality, and if the exportation of it were not prohibited, the manufacture might be carried to a very great extent. The price of the clayed sugar at Ava, is 30 to 36 rupees the 100 *vis.*, or 365 lbs. avoirdupois. The principal articles of import by sea into the Birman dominions are Bengal, Madras, and British piece-goods. British woollens, iron, wrought and unwrought, copper for sheathing, lead, borax, quicksilver, sulphur, saltpetre, gunpowder, fire-arms, sugar, arrack and rum, a little opium, earthenware, Chinese and English glass-ware, cocoa-nuts, and betel-nut. The trade in British piece-goods, has of late years much increased. On the northern frontiers of the Birman dominions, an active trade is carried on with China, and other eastern states.

Where is the chief emporium ?

At a place called Banmoo, on the Chinese frontier, and at Midai, four or five miles to the northward of Amerapoor. Mahomedan, and Birman merchants of Ava, go to Banmoo to meet the Chinese, part of whom, not unusually four or five thousand, come down to Midai.

What do the Chinese import ?

Copper, orpiment, quicksilver, vermillion, iron-pans, silver, good rhubarb, tea, fine honey, and raw silk, with dogs and pheasants.

What are the returns ?

Chiefly cotton, ivory and bees-wax, British woollens, broad-cloth and carpets.

How is the internal commerce carried on ?

Chiefly by means of the River Irrawaddy, on which several thousand boats are annually employed in transporting rice from the lower provinces, to supply the

capital and northern districts; as also salt, and *nappi*, or pickled sprats. Articles of foreign importance are mostly conveyed up the Irrawaddy, a few are introduced by the way of Arracan, and carried over the mountains on men's heads. European broad-cloth, hard-ware, coarse Bengal muslins, Cossimbazar silk handkerchiefs, china-ware, and glass, are the principal articles carried up the river. Cocoa-nuts, from the Nicobars, bear a high price. Merchants carry down silver, lac, precious stones, catechu, and some other articles. The lower parts of the Burman territory, Sarwan and Sarwaddy especially, are considered as particularly adapted to the cultivation of indigo; the plant grows wild, and is also cultivated by the natives for domestic use: more than one manufactory was about to be established by Europeans when the war broke out. Another line of traffic is that with the kingdom of Laos. The chief fair is at Pelk, six or eight miles south of Ava, on a small river which falls into the Irrawaddy, and one more considerable is annually held at the Dagon Pagoda near Rangoon. In the dry season the Shans repair annually to the Birman country, bringing with them stick-lac, bees-wax, a yellow dye-wood, various drugs, and gums, raw silk, lacquered ware, ready-made jackets stuffed with cotton, onions and garlic, turmeric, and coarse sugar in cakes. The chief returns are dry fish, *nappi*, and salt.

What is intended by the British Commissioners in Arracan for the convenience of traders beyond the mountains?

To establish regular marts at Talek and Aeng, exempt from any duty. The salt works at Arracan, are likely to be very productive.

What is the average price of rice?

At the capital it is about 2s. 8d. for 84lbs; at Rangoon and Martaban about 250 lbs. are sold for 2s. 8d.

Name the chief cities of the Birman empire?

The present metropolis is *Ava*, situated on an eastern branch of the Irrawaddy, in  $21^{\circ} 51' N.$  lat. *Amerapoor*a, upon the same river, six miles above *Ava*. The number of population in the three cities, of *Ava*, *Chaigang*, and *Amerapoor*a, has not been yet exactly

ascertained; the other large towns of the Birman empire, such as *Rangoon*, *Prome*, *Mouchaboo*, *Monay*, and others, do not, any of them, with the exception of the first, contain above 10,000 inhabitants. Pegu, comprising all the sea-coast, and mouths of the rivers, was formerly the principal city of a kingdom of the same name. This city, on the River Pegu, is said by some to have been twenty miles in circumference: the most remarkable remnant of its former grandeur is an edifice called the Shamadoo: on the first arrival of the Portuguese, Pegu was found the ruling state. In 1757, it was utterly destroyed by Alompra, by whom the Pegu dynasty was extinguished. Rangoon, at the mouth of the Irrawaddy, is one of the chief ports of this empire; it was only lately founded, but has increased with such rapidity, that it is now supposed to contain 30,000 inhabitants; the other ports of this country are now in possession of the British.

What districts are comprized in the British Birmese territories?

These consist of the maritime province of Arracan, including its dependencies *Ramree*, *Cheduba*, and *Sandoway*, Tenasserim, the Mergui Islands, Tavoy, Ye, and Martaban; the Saluen River being the general line of demarcation.

Describe the position, boundaries, and extent of Arracan.

This province lies between  $18^{\circ}$  and  $21^{\circ}$  N. lat. On the north it is separated from the Chittagong district by the River Nàuf; on the east, it has the Arracan Mountains; on the south, Bassein of Pegu; and on the west by the Bay of Bengal. Its extreme length may be estimated at 230 miles, and its average breadth at 50.

What is the state of cultivation, and the number of its population?

When conquered by the British in 1825, no more than 400 square miles of the whole surface were supposed to be under cultivation, and the total population was estimated at 100,000 souls.

What is the prospective annual revenue for five years?  
220,000 rupees.

What is the chief diet of the people?

Rice, with fish or vegetables. Little flesh is eaten, and milk is never used. An article in universal demand, manufactured near the coast, consists of putrescent shrimps and whittings, which after being dried in the sun, are pounded in a mortar with crabs, and seasoned with salt.

Is the climate healthy?

Arracan proved the grave of General Morrison's army in 1825, and has been equally destructive even to the native regiments stationed on the sea-coasts and among the islands.

## CHAPTER XXXVI.

### TENASSERIM, MALACCA, &c.

Describe the British acquisitions on the Tenasserim coast.

These are bounded by the Birman and Siamese territories and by the sea. The Birman frontier extends about 140 miles, and consists throughout its whole length, of the Saluen River, a broad and deep stream, nowhere fordable within the British limits, at any season of the year.

The Siamese frontier is everywhere composed of a lofty and rugged range of mountains, on which there are not more than three passes supposed to be practicable for an army. The sea-coast ceded to Britain, extends from  $16^{\circ} 30'$  to  $9^{\circ} 35'$  N. including a territory 420 miles long by 50 broad, along the Bay of Bengal.

What is the modern capital of the Tenasserim province?

Mergui, situated in  $12^{\circ} 12'$  N. lat., and  $98^{\circ} 25'$  E. long. It contained in 1825, 1500 houses and 8,000 inhabitants. The climate is singularly agreeable.

Where are the Mergui islands?

These form a chain of high, bold, and generally rocky islands, along the coast of Tenasserim, which protect it against the violence of the S.W. monsoon. There is a spacious harbour capable of containing the largest fleet, to the northward of St. Matthew's Isle. During the

last war, many valuable captures were made by French cruisers which refitted at Mergui, and among the Mergui islands.

Where is the new settlement of Amherst?

At the mouth of the river Saluen, where there is a good harbour, the place being also peculiarly favorable for all the purposes of ship-building, from the discovery of extensive teak forests, on the banks of the Attaran and Gaui rivers, which admit of rafts being floated down into the Saluen river, and to Amherst, in four or five days.

What other town has been founded in its neighbourhood?

Moulmein, 27 miles to the north of Amherst, has a very rising trade, exporting teak timber and rice in exchange for British cottons, and naval stores. There is considerable ship-building, valued in 1837 at £37,500.

What is the situation of Tavoy, and nature of the country?

This district is bounded on the north by the Henza river, but the line separating it from Tenasserim on the S., has not yet been ascertained. Almost the whole surface is covered with forest trees, jungle, and luxuriant vegetation.

Where is the town of Tavoy?

It is situated in  $13^{\circ} 4'$  N. lat. on a river of the same name, 30 miles from the sea, and 150 miles S.E. of Rangoon. It is an old Birman town, built on a regular plan, with straight streets, paved with bricks. The population is about 9000, two-thirds of whom are Birmans.

Describe the district of Ye.

This small province is usually included in that of Tavoy. It is bounded on the north by the Kyaup-Kyajee river; on the east by the Syamese mountains; on the south by the Henza river; and on the west by the sea.

Describe the position of Martaban.

This province is comprehended between  $16^{\circ} 30'$  and  $15^{\circ} 30'$ , north latitude. It is bounded on the east by the Siamese mountains; on the south by Ye; on the

west by the sea: the boundary of the Birmese portion is uncertain, that of the British portion is formed by the Saluen river. Nine-tenths of the surface is covered with forests and jungle.

What is the population?

In 1825 the total population was estimated at 45,000, of whom 25,000 belonged to Britain.

What is the climate of Martaban?

The S.W. monsoons and the rain, set in together about the beginning of May, but they are severest in June, July, and August. In September the winds and rains moderate; in October they become still less, and in the beginning of November entirely cease; after which the cold season sets in, which continues until the end of February: the climate in many respects greatly resembles that of Bengal.

What are the estimated capabilities of these newly acquired territories, to support population?

If peopled like Hindostan, the space is capable of supporting 4,700,000.

What are the best ports?

Amherst, Tavoy, and Mergui, at all of which ship-building may be advantageously carried on.

Describe the situation and extent of Malacca.

The territory of Malacca, supposed by some geographers to be the *Golden Chersonesus*, forms a long peninsula at the southern extremity of India beyond the Ganges—connected on the north with the British province of Tenasserim, by the isthmus of Kraw, which is here about 97 miles in breadth; and on all other sides it is washed by the Indian Ocean. In length it may be estimated at 775 miles, and in average breadth at 125 miles.

Name the southern extremity.

Point Romania, in  $1^{\circ} 22'$  N. lat.

Describe the chief mountains and rivers.

A granite range of mountains intersects the peninsula throughout its whole length. It attains its greatest elevation towards the northern extremity, where it appears to be a continuation of the chain at the Chinese frontier. From both sides of this chain many small



streams descend to either coast, but they are almost all choked up at their mouths by sand banks and mud bars.

What are the principal of these streams?

The *Tunelong*, the *Peaya*, and the *Perak* on the west, and the *Pekango*, *Cullantan*, and *Rindango* on the east. Many small islands belong to this peninsula, especially at the southernmost point.

What is the nature of the soil and productions?

The soil is not remarkable for its fertility; and grain is imported from Bengal and Sumatra. Legumes and fruit are abundant, and excellent; the sugar-cane and indigo plants have been introduced. Pepper is a valuable production. Ambergris and pearls have been found on the coast; and in the interior, iron, gold, and tin. The great article of export is opium; tin is also sent in considerable quantities to China. Besides these, the Malay Peninsula exports bees-wax, edible-nests, cutch, dammer, fish-maws, rice, rattans, shark-fins, betel-nut, canes, dragon's blood, ivory, gold-dust, sago, aquilla-wood, sapan-wood, and hides.

Describe the edible bird-nests.

These nests are constructed by a kind of swallow which frequents the coasts in those seas at certain seasons. The nests adhere to each other, and to the rock on which they are built. They are of the size of a goose's egg, and of semicircular form. When dressed they dissolve into a kind of jelly, of which the flavour is said to be peculiarly delicious. They are distinguished into two kinds, the white and the black: the white being by far the most valuable. The white sort sells in China at the rate of 1000 or 1500 dollars the *pekul*; the black is usually disposed of at Batavia, for about 20 dollars the same weight, where it is chiefly converted into glue, of which it makes a very superior kind.

What animals inhabit that peninsula?

Tigers, leopards, apes, opossums, the *Trichecus dugong* and *rhinoceros*, are found in the forest; buffaloes are the principal cattle, and elephants, of a highly esteemed breed, are found adjacent to the Siamese territories.

What is the estimated number of the population?



According to a census taken in 1828, the whole territory of Malacca contained only 33,806 persons.

Where is the city of Malacca situated?

Near the southern extremity of the Peninsula.

What is the extent of British territory attached to it?

The British territory attached to Malacca extends about 40 miles along the shore, by 30 of extreme breadth inland; but it does not contain an area of above 800 square miles.

What are its boundaries?

On the north, it is bounded by Salengore at Cape Rochado; on the south, by Jahore at the river Muar; and on the east by the Rumbo country.

What rivers water it?

The *Muar* and the *Lingtuah*.

What is the nature of the soil, and what are the mineral productions?

The soil is not fertile; but the tin mines are productive, as 4000 pekuls have been procured in one year from them. A recent report announced the discovery of a very rich gold mine at Bukit-Taong, within the British territories.

What is the character of the port of Malacca?

It has a safe roadstead, and a salubrious climate; but since Prince of Wales' Island and Singapore have risen to their present importance, the port of Malacca is much less frequented.

Where is Quedah?

The principality of Quedah, by the Siamese called *Cherei*, is situated on the west coast, immediately opposite to Prince of Wales' Island. It extends along the coast about 150 miles, commencing from the river Traang its northern boundary; and is from 25 to 30 miles in breadth. About the beginning of this century, the sultan of Quedah ceded a district of coast to Britain, now called *Wellesley* province, which in 1824, contained 11,000 souls. In November, 1821, the Quedah was invaded by a large fleet of Siamese prows, and subdued with little difficulty:—the King seeking refuge at Penang, where he still remains under British protection, with an allowance of five hundred dollars.

What is the situation of Jahore?

This principality comprehends the whole eastern extremity of the Malay peninsula, from the river Muar on the west, to Kamamang on the east; also the numerous islands at the mouth of the straits of Malacca, between the 2nd parallel of N. and the 1st of S. latitude, besides all the islands in the sea of China, lying between the 104th and 109th degrees of east longitude.

Into what sections are these extensive dominions divided?

They are partitioned into three sections, viz.:—1st, the islands to the south of the straits, which are under protection of the Dutch. 2nd, those to the north, and the country on the west coast of the peninsula and its extremity, in the possession of the English: and the continental portion on the east coast, forming the independent but petty state of Pahang.

What is the population of these three principalities?  
135,000 souls, exclusive of China.

What is the mineral produce of these states?

Tin and gold. The tin mines of Pahang, wrought by the Malays, produce 1000 peculs of that metal, and two peculs of gold, annually. In Timganoo the produce of tin is 700 peculs annually, and a proportionate quantity of gold. Callantan produces in tin, 3000 peculs. Independent of the Chinese engaged in other branches of industry, above 15,000 of that persevering race, are employed in the Jahore states in working the gold mines; and the produce of their united industry is calculated at 420,000 spanish dollars annually.

Where is the island of Bintang?

This island, belonging to the Dutch, lies off the S.E. extremity of the peninsula. It is about thirty-five miles in length, by 18 in breadth. The chief town is *Rhio*, formerly a port of considerable trade.

What is the situation of Prince of Wales' Island?

This island, named also *Pulo-Penang*, or "Betel-nut island," is situated off the west coast of the peninsula, having its north-east point in  $5^{\circ}$ ,  $25'$ , N. lat. and  $100^{\circ}$   $19'$  E. long. It forms an irregular quadrangle, and is computed to contain about 160 square miles. In 1785, *this island* was granted to Captain Light, of a country

ship, by the King of Quedah, as a marriage portion with his daughter:—Captain Light transferred it to the East India Company, and was appointed its first governor in 1786.

Of what rock does this island consist?

Entirely of granite. The soil is various, but generally very good. The forests produce excellent ship-building timber.

How much of this island is cultivated, and what are the productions?

Much of the north, and nearly the whole of the south and east parts, are under cultivation. The principal productions are pepper, nutmegs, betel-nuts, coconuts, coffee, sugar, rice, ginger, yams, mangosteens, three varieties of pine-apples, guavas, oranges, citrons and pomegranates. Pepper is the staple article of produce, and its cultivation is almost exclusively in the hands of the Chinese. The nutmeg may be reckoned next. It is upwards of twenty years since the trees were first planted here, and there are now 150,000 on the island, of which, one-third are in a condition to bear fruit. Each tree is calculated to yield 1000 nuts annually, which sell for five Spanish dollars, and the mace for about the same sum. The clove is also cultivated with great success. The *urceola elastica* or American caoutchouc, is found in great plenty. Almost all the country-ships, bound to the eastward, particularly those for China, touch here.

What sort of harbour is there?

The harbour is formed by a strait, about two miles across, which separates the north side of the island from the Quedah shore. It is capacious, and affords good anchorage. In 1822 the total imports were valued at 2,662,558 Spanish dollars.

What is the amount of population?

The population of this island and its dependencies, including Wellesley province on the main-land, up to the 31st December, 1822, was 51,207 souls, of whom 24,520 were Malays and Buguese, 8,900 Chinese, 6,915 Chulias, 1,670 Bengalese, 1,172 native Christians, and 400 Europeans, and their descendents. Such a variety

of different races are congregated here, that it is said there are 22 languages spoken on the island.

Describe the situation of Singapore.

Singapore is a beautiful island in the straits of Malacca, situated at the southern extremity of the peninsula, and in the entrance of the Chinese sea.

When was this island taken possession of by the British Government?

On the 26th February, 1819, under a treaty concluded with a native chief,—and in 1824 a regular cession was obtained of this and the neighbouring islands for ten miles round it, from the sultan of Johore.

What are its advantages?

It is in the direct route from Bengal to China, and commands, by its position, the immense trade of the islands adjacent, as well as that of the eastern coast of Sumatra.

Is the harbour safe?

Singapore harbour affords safe anchorage at all seasons.

What is the position of the town?

The town stands on a point of land, and is divided into three districts, viz. :—Malay town, Chinese town, and English town, which latter, yet contains but few Europeans. English town is laid out in squares, and spacious streets crossing each other at right angles ; and is generally decorated with trees.

What is the character of the climate of Singapore?

The climate, although warm, is yet, in spite of its mangrove swamps, and marshy soils, extremely salubrious, and appears to be little subject to the remittent and yellow fevers, and other diseases so fatal to Europeans in most tropical climates.

How are the markets supplied?

The markets are well supplied with fish and poultry, and dried and salted provisions are plentifully imported in the Chinese junks from Siam. Tropical fruits and roots are also abundant.

What are the vegetable productions for commercial purposes?

*They have hitherto raised in this young settlement only the pepper-vine, and the nauclea gambir or terra*

*japonica*, an article exported to Java, and other eastern isles, where it is chiefly used for chewing with betel-nut leaf.

What is the state of the trade of the island?

It is very considerable, and fast increasing. The intercourse, through the means of Chinese junks, is immense. Vessels of smaller size from Siam and Cochin-China are yearly increasing in number, and a considerable trade is also opening with Manilla. In 1822, the value of exports and imports amounted to 8,568,172 dollars, and in 1825, it was estimated at not less than 20,000,000. In 1828—9 the exports alone amounted to 18,046,604 sicca rupees, of which 6,639,730 were to England. Sugar is generally sold here at half a dollar less per pical than at Pulo-Penang. The intercourse of Malay prows is very considerable—hundreds of them going out and in daily, exchanging their produce for European manufactures.

What is the state of the population?

When first taken possession of by the British, the total population did not exceed 150 souls, but in Feb., 1829, the number had arisen to 17,644, exclusive of the military and convicts. Of this population, however, only 122 were Europeans, and only 4,232, females.

The student of Australian Geography having thus become acquainted with the shores of the Pacific Ocean from Patagonia to the Promontory of Malacca, where the continent of Asia approaches nearest to Australia; may now continue a similar course westward along the shores of the Indian Ocean.

## CHAPTER XXXVII.

### HINDOSTAN.

What are the boundaries and extent of Hindostan?

It is bounded on the north by the Himalaya mountains; on the east by Arracan, Cassay, and the Langtang mountains; on the S.E. by the Bay of Bengal; on the

S. and S.W. by the Indian Ocean; and on the west by the course of the Indus. According to these boundaries, the extreme length of India from north to south is 27 degrees of latitude, viz :—from Cape Comorin in  $7^{\circ} 57'$  to the crest of the Himalaya in  $35^{\circ}$  north latitude—or 1,620 geographical miles, which are equivalent to 1,880 English miles. Its breadth between east and west from the mountains which in  $92^{\circ}$  east long. separate the cirar of Silhet from Cassay, to the most north-west mouth of the Indus—in  $67^{\circ}$  east long., is 25 degrees, which, in that latitude are equal to 1,400 geographical, or 1,620 English miles.

What is the area?

1,100,000 geographical, or 1,280,000 English square miles.

What is the character of the region known by the name of India?

In every age it has been the seat of oriental pomp, of an early and peculiar civilization, and of a commerce supported by richer products than that of any other country ancient or modern.

What are the most remarkable physical features?

The Himalaya Mountains are pre-eminently the chief. Hindostan, when viewed on a map, presents two grand features of territory; namely, the continent of India or *Hindostan proper*, and the *Deccan*, or peninsula. The former extends from the Himalaya to the head of the gulf of Cambay and the mouth of the Ganges; the latter extends south to Cape Comorin, and is surrounded on all sides by the sea, except on the north, where a line drawn from the S.E. mouth of the Ganges to the head of the Gulf of Cambay represents the natural limit.

What is the height of the Snowy Range on the Table Land of the Indus?

29,000 feet.

Name the other mountain ranges of India.

The *Ghauts*, and the Neelgherry mountains.

Where is the chain of the *Western Ghauts*?

It extends from Cape Comorin to the Tuptee or Surat river, across an extent of 13 degrees of latitude, and at an average distance of about 40 miles from the sea coast.

What is the character of the rivers of India?

The glory of Hindostan, it has been remarked, consists in its noble rivers—the name of the *Punjaub*, or “Land of streams,” which the natives apply to a small portion of the north, is descriptive of the whole country, and in this respect it presents a remarkable contrast to Persia, the neighbouring kingdom on the west.

What peculiarity characterises the great rivers of India?

The greater part of them flow upon levels, along very gentle declivities, and possess a great depth of water, so that they may be easily rendered available for purposes of internal communication, and instead of tearing up and devastating the country during the rainy season, as in Africa, they nearly overflow it with a fertilizing influence.

Name the principal rivers.

The Ganges—the Indus—the Brahmapootra—the five tributary rivers which unite and give name to the *Punjaub*, are equal to the largest rivers of Europe; but in a mere sketch, it would be vain even to attempt to enumerate the tributary streams of the Ganges alone. Of the principal branches that enter the Ganges on the left side, the five principal are,—the Gogra, the Gundueh, the Cosa, the Teesta, and the Brahmapootra. Of the streams which join the Ganges on the right, or western bank, the two most worthy of notice are the Jumna and the Sone.

What are the chief rivers of the Deccan?

The chief rivers of the Deccan are,—the Nerbuddah and the Tuplee, flowing west; and the Mahanada, the Godavery, and the Krishna, flowing east.

What is the nature of the climate of India?

The climate of India is much affected by the three great modifying causes of position in latitude, the nature of the surrounding region, and the form of the surface. About the middle or towards the end of April, the rain begins to fall towards the Ghauts, but the full violence of the monsoon does not take place till towards the end of May.



When is the rainy season in that part of India to which the monsoons extend?

When the S.W. monsoon prevails, the Malabar coast is deluged with rain; when the N.E. monsoon commences, about the middle of October, the rainy season on the Coromandel coast begins.

The temperature during winter, is higher on the east than on the west coast.

Where is the Malabar coast?

That name is given to the Western coast of the peninsula.

Where is the Coromandel coast?

It is the eastern coast of the peninsula.

Taking Madras and Bombay as medium stations between the two coasts, what is the difference in winter temperature?

The difference may be stated at  $7^{\circ}$ ,—Madras being  $71^{\circ}$ , and Bombay  $64^{\circ}$ .

What is the temperature at Calcutta?

In April and May, before the showers, the thermometer at Calcutta rises to  $110^{\circ}$ , and a *coup de soleil* is almost the certain result of exposing one's self to the direct rays of the sun.

What is the general character of the soil?

The soil of India is in general fertile, with less variety than might be expected in so vast a surface. The depth of vegetable earth is in some places not less than six feet.

What are the chief vegetable productions?

India produces those species of grain which are most common to Europe; but rice, as it forms the chief food of the inhabitants, is the great object of culture, and owing to the levelness of the country, this grain can be cultivated extensively. There are twenty-seven varieties of it cultivated, and the land brings forth crops all the year round. Maize seems, next to rice, to be the most extensive crop, at least in the western provinces, but wheat and barley are likewise successfully cultivated. Indigo is a staple article of the East Indies. Sugar-canes and cotton are reared in many places; but the tobacco of Hindostan is said to be inferior to that of America.



probably, because it is cured with less skill. Mulberry-trees are carefully reared for the purpose of breeding silk-worms.

What is the value of Indian silk as compared with silks of China and Italy?

Indian silk is considered inferior to China silk by 9, and to Italian silk by 11 per cent.

What are the principal trees in the forests of Hindostan?

The species are very numerous. Among them the numerous and peculiar family of palms presents several species of which that producing the cocoa-nut (*cocos nucifera*) is the most remarkable. This palm is seldom seen wild; but is every where cultivated on account of its nuts, which in Indian countries are chewed with betel. A vigorous tree will yield 500 full grown nuts in the season. The large fan-palm has leaves of which one is sufficient to cover ten men, and only three or four to thatch a cottage. The leaves of the smaller fan-palm are used as paper, and from its trunk is produced a liquor called *palm-toddy*, the palm wine of Africa, which becomes *arrack* after it has undergone the vinous fermentation; and, when boiled down to a syrup, is called *jagary*, and serves as a substitute for sugar. The plantain produces a fruit, which in many places is used as bread, and the teak-tree (*Tectona grandis*) is said to excel British oak in the building of vessels: of this, the trunk attains an enormous size, the leaves being a foot and a-half long or more. The Banyan tree sometimes covers an area of 2000 feet. The bamboo is a valuable production, shooting up to the height of sixty feet in a season; in one year it attains its full growth, and during the next the wood consolidates. Hopea-tinctoria is a tree which grows to an enormous size, of which cannons are made, and which produces a valuable resin; a privet, which constitutes "a timber;" three kinds of nutmeg, whose wood is extensively used; a large olive; five species of pine, natives of Nepaul, one of which *pinus deodora*, yields a fragrant wood; the very large pine of Tawey, a tree-fern of Nepaul, forty-five feet high; three species of plum; four species of

pyrus; ten of oak, of which the *quercus semecarpifolia* becomes a very large tree, having a clean trunk eighty to one hundred feet in height, and fourteen to eighteen feet in the girth, at five feet from the ground; a buckthorn, whose wood is very hard and heavy; three rhododendrons, among them the splendid *R. arboreum*, of which gunstocks are made; a *rubus* (or *bramble*), as thick as a stout man's arm; three willows, among them the weeping willow, which in Nepaul attains an enormous size; a yew; and lastly the saul or sole, —the staple timber of Hindostan for building purposes.

What are the principal fruits?

The fruits of Hindostan are very numerous, cocoanuts and plantains have just been mentioned; to these may be added pomegranates, citrons, dates, almonds, grapes, ananas or pine-apples, and tamarinds. In the northern provinces, apples and pears are plentiful: oranges and lemons are also found, but are said to be of inferior quality. The fruit called mango is said to be one of the most exquisite of all the fruits of India. But the mangosteen is the most delicious fruit that grows in British India. The *durion* is a fruit of most offensive smell and exquisite taste. The small fruited banana has in all ages been the food of the Indian philosophers.

What trees and shrubs, useful in medicine or the arts, are found in Hindostan?

There are many, though in these respects, the country cannot vie with the eastern archipelago. Among those used in medicine, are the *cassia fistula*, *nux vomica*, and the *laurus cassia*. Among those useful in the arts, are the tree whose gum is well known by the name of *gamboge*, and the *casalpina sappan*, used in dyeing red. The cotton tree also flourishes here; sandal-wood is almost exclusively confined to the south-west of Mysore. The pepper-vine is found native in some places of India. The *papaver orientala*, from which opium is obtained, thrives in almost all the provinces. Indigo is cultivated on a large scale in Bengal, Bahar, Oude, and Agra. The value of this article annually produced in India was recently estimated at £3,000,000.

What renders the cultivation of indigo so profitable in Hindostan?

Because an immense extent of land is required to produce but a moderate bulk of the dye ; because labour and land are cheaper here than anywhere else ; and because the raising of the plant and its manufacture can be carried on even without the aid of a house.

Who are the chief manufacturers of indigo ?

Europeans—there being at present in Bengal 309 manufactories of indigo for exportation, of which thirty-seven only are conducted by natives, and these in imitation of the European process. *Cajeput* oil is obtained from an East Indian shrub, the *Melaleuca Leucadendron*, and, in a pure state, is considered one of the best preservatives of preparations for natural history. It is used externally, and with much success, as a cure for rheumatic affections and pains in the joints. *Caoutchouc* or Indian-rubber, is the inspissated juice, not only of several species of ficus, but of the elastic gum vine. Of the same genus is the poison nut—*Nux Vomica*, and the cleansing nut whereof the ripe seeds are sold in every market to clear muddy water. The *Valeriana Jatamansi* abounds in the hilly parts of Nepaul, and is determined, by Sir William Jones, to be the true spike-nard of the ancients, or Indian Nard. On the still lakes and tanks of water, are many highly curious aquatic plants. Amongst the water-lillies, is one famous in history, the cyamus nelumbo, or sacred bean of India, whose splendid flowers, of a full rose colour, rise considerably above the surface of the water. A plant called sola or shola, is used for many purposes by fishermen ; the Indians make hats of it ; the stems are cut into thin laminæ to make artificial flowers, &c. This plant is perennial and grows on the borders of lakes, it is the *Æschynomene paludosa* of Roxburgh.

What domestic animals are reared in India ?

Among these may be enumerated, elephants, buffaloes, oxen, horses, asses, and mules. The Indian elephants differ from those of Africa, not only in the structure of the teeth, but in having a toe more on each foot, and smaller ears.

What is the standard height for an elephant ?

Nine feet for male elephants, and such an animal will

carry a load of nearly a ton. The dromedary is found in some places. Horses are numerous; but as the breed is not equal to that of Arabia, the wealthy are supplied from that country and from Britain. The oxen and buffaloes are of large size; they are always used in carriages, and sometimes they are made use of in riding. When intended for these purposes, they are trained to a step quicker than that which is natural to them, and are managed by a rope fastened to a ring which is passed through the gristle of the nose. The sheep have large tails, and they are covered with hair instead of wool, except in the northern districts.

Name the principal wild beasts of India.

These are numerous, particularly in such parts as are but thinly peopled. The lion has been hunted and killed in the neighbourhood of Bombay. The chief haunts of the tiger are near the banks of the Ganges. His leap is said to be sometimes not less than 100 feet. The animal takes his name from this spring; shooting himself like an *arrow* at his prey,—the word "*tiger*" in the Armenian language meaning arrow. The minor animals of prey are—leopards, jackals, wolves, bears, wild boars, panthers, hyænas, lynxes, and foxes. In the forests near the Circars, the ourang-outang is found, and apes and monkeys of different kinds are plentiful. The rhinoceros is common in Northern Hindostan, and it is said to occur in some of the isles in the Ganges. Different kinds of antelopes are numerous; with red-deer, fallow-deer, musk-deer, and elks. In the northern parts are many species of small animals, among which may be mentioned the musk-weasel.

What birds are most remarkable?

The radiant hues of the peacock still gild the thickets in all parts of the country; and all the domestic fowls now common in Europe, seem to be natives of this part of Asia, from which they have been successively carried to other countries. The jungle cock is spread over the whole of this peninsula. The oriental pigeons vie in brilliancy with the parrots, and consist of many species.

What insects and reptiles are found most numerous?

*The inhabitants are tormented by innumerable swarms*

of flies, white ants, mosquitoes, and bugs. Scorpions, snakes, and rats, are plentiful ; nowhere are the serpent tribe more formidable, either for their muscular strength, or their poison.

What mining operations are carried on in India ?

These are confined to one object. This part of Asia has been celebrated from the earliest ages for its diamonds. The Indian diamonds occur chiefly in a high and rugged tract extending from Golconda across the interior of Orissa. They are found mixed with sand and earth filling the cavities of narrow veins traversing a granitic rock. At Color they are found in the soil of a plain, at the foot of some high mountains ; while at Sumbulpoor, they are mixed with the sand of the river Gouel, which falls into the Mahanuddy. These various mines give employment to a great number of workmen. Mines of lead, iron, copper, and tin, are said to exist, but are not worked in sufficient quantities for home consumption. Common salt abounds, but the great masses of rock-salt are found to the west of the Indus.

What are the chief articles of commerce ?

The productions of Hindostan are valuable and numerous. The soil is rich, and capable of producing everything which can minister to man's happiness and enjoyment. In a commercial view, indigo has taken the lead of every other Indian product. Some idea may be formed of its importance from the fact, that in the presidency of Bengal the cultivation of Indigo occupies upwards of 1,000,000 statute acres, and produces annually about £3,000,000. Silk is another staple of India ; this is in the hands of small cultivators, to whom advances are made by the East India Company. Cotton, the material of the great national manufacture, is chiefly raised in the inland and somewhat dry tracts of Agra and the Deccan. Mirzapoor, in the province of Agra, is the general market for cotton, the price of which varies from £1 13s. to £2 4s. 6d. per cent. It is not equal in quality to the American. *Spices* form also a valuable product of Hindostan—especially *pepper*—grown but on the high wooded mountains, overlooking the coast of Malabar. *Sugar* was plentiful in Hindostan before it

was known in Europe. *Opium* is the staple of the interior province of Bahar, and is raised of still superior quality in Malwa; it is a precarious crop. *Coffee* has become an article of considerable importance. In 1836, 9,500,000 lbs. were imported into Britain from Malabar. *Saltpetre* is produced more abundantly in Bahar than in any other known country: its formation takes place chiefly during the hot winds, and seems to be connected with that phenomenon.\* Rice, wheat, and barley, have already been mentioned. The quantity of tobacco raised in India, though not an indigenous plant, is enormous. The cultivation of the potato is spreading rapidly in Hindostan, and the tea-plant has lately been found in India, in large natural plantations.

Of what do the articles of internal commerce chiefly consist?

The principal articles of internal commerce are grain and salt, together with betel-nut, tobacco, and sugar, with some few articles of lesser note, forming the list of what may be termed the necessaries of life to the natives, and the traffic in which they have always engaged. The inland trade of Bengal is the most extensive, owing to its great facilities of transportation by water. The vessels are very cheaply constructed, of canes and bamboos. It is calculated that upwards of 300,000 boatmen are employed in this trade, the greater part of whom are at the same time partly agriculturists or fishermen. The land carriage is performed by oxen chiefly, sometimes by horses, but rarely by buffaloes, who though more docile than the ox, are more sluggish, and are extremely addicted to lie down in the waters through which they have occasion to pass. The manner in which the internal commerce appears to have been originally carried on, and which, in a great measure, still continues, is at *hauts*, in open markets, resembling fairs—held on certain days only, and established in open plains, to which the farmer, the mechanic, and the fisherman, bring their various commodities.

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\* The total quantity imported from Calcutta during the 35 years ending 1829-30 was 2,202,465 bags, of which the United Kingdom received 1,523,655.

What do the Indians export ?

The Hindoos have never been a trading nation, nor carried any of their own precious products into other countries ;—they rejected, too, almost every article which was taken in exchange, and would accept nothing but treasure. Through the activity of British merchants, however, a great change has been effected, and British manufactures are now largely introduced.

State briefly the history of the British Empire in India.

“ Two centuries since, a few British merchants humbly solicited permission of the Indian princes to traffic in their dominions. The British power at present embraces nearly the whole of that vast region which extends from Cape Comorin to the mountains of Thibet, and from the mouths of the Brahmapootra to those of the Indus.”\*

State briefly the amount of population and the resources of British India.

The population is four times greater than that of the United Kingdom ; and, of all the rest of the British empire in all parts of the world, India alone defrays from its own resources the whole charge of its civil government, and of its military defence,—being subject to the rule of British-born subjects, in all the higher and more lucrative and honourable offices of the state. India is further required to transmit annually to England a sum amounting to between £2,000,000, and £3,000,000 sterling.

Describe the Bengal presidency.

Bengal is the greatest of the three into which British India is divided, comprising much more than the mere province of that name.

What is its extent ?

Bengal comprises all the fine regions watered by the Ganges and the Jumna, the province of Bengal, Bahar, Benares, Oude, Allahabad, Agra, Delhi, and Orissa.

What is the nature of the soil of Bengal proper ?

\* *Mill's History of British India.*

The soil consists entirely of sand and clay ; not a rock, nor even a stone, being found for 400 miles up the Ganges.

What is the nature of the sea coast ?

Nearly the whole sea coast of Bengal consists of the Sunderbunds, extending for about 180 miles. The Ganges enters the sea by eight large mouths, dividing itself into a labyrinth of streams and creeks, through which boats make a difficult and perilous passage amid conflicting tides and eddies.

Which of the mouths of the Ganges is now navigable for large vessels ?

That of the Hoogly, the most westerly, and on whose banks is situated Calcutta, which, from a few straggling cottages in a wooded marsh, has been raised by Britain to be the capital of India.

What were the chief articles imported and their value, in the year 1837-8 ?

Cotton piece-goods, £632,500 ; cotton twist and yarn, £512,250 ; woollens, £91,400 ; copper, £232,000 ; iron and steel, £100,500 ; apparel, &c., £50,580 ; peppers, £58,950 ; salt, £134,900 ; ale and porter, £48,000 ; books, £28,980 ; stationary, £13,600.

What is the principal river westward of the Ganges ?

The Godavery.

Name the province formed by its Delta.

Tanjore.

What is this province chiefly remarkable for ?

For an extensive and careful system of irrigation, by which a tract of 3000 square miles, containing 1,500,000 inhabitants, supplies annually half a million sterling. The whole of the irrigation works have been erected and are kept in repair at the expense of the government.

Where were steamers first employed in India ?

To run from Calcutta to Allahabad, thereby shortening the voyage from five or six weeks to the same number of days.

What is the character of the southern coast of India ?

It is different from the interior, in presenting a rugged, rocky, and irregular surface.



What name has been given to the territory along the coast to the eastward of Cape Comorin?

The Carnatic.

Name the capital of the British possessions there?

Madras.

What is its chief defect?

That it has no harbour, but a mere roadstead, through which runs a strong current, and which is often exposed to dangerous winds.

Name the fort.

Fort St. George, situated at a small distance from the sea.

What is the quality of the soil?

It is somewhat arid, but the hand of art has covered it with verdure.

What is the situation of the island of Ceylon?

Ceylon, is situated at the western extreme of the Bay of Bengal; between  $6^{\circ} 5'$  and  $9^{\circ} 50'$  north latitude, and  $79^{\circ} 50'$  and  $82^{\circ} 5'$  east longitude. On the north-west it is separated from the Coromandel coast of India, by the gulf of Manaar, and it is distant about 160 miles from Cape Comorin.

What is its extent?

From Point Pedro, its northern extremity, to Don-drahead its southern, the extreme length is about 270 miles. Its breadth is from 40 to 140 miles. Its superficial area is about 27,000 square miles.

What are the principal harbours?

Trincomalee on the north-east, and Point de Galle on the extreme south.

What are the principal productions of Ceylon?

The palm tribe are the most generally useful of vegetable productions to the Cingalese; among them the Cocoa-nut holds the first rank, supplying the inhabitants with bread; milk, sugar, and oil; it affords them a strong spirit, vinegar, and yeast; its top is an excellent substitute for cabbage; it furnishes timber to build huts, and thatch to cover them; the shell of its nut is no mean article in the scanty catalogue of household utensils, and it supplies both cloth and cordage. The palmyra, areca, nago-palm, talipot-palm, and bread-fruit.

tree flourish equally well. Next to the palms, the jack tree is most esteemed. Pine-apples, oranges, lemons, mangoes, plantains, almonds, pomegranates, and other fruits, are plentiful and excellent. Coffee grows luxuriantly, and tobacco of a fine quality. In the Jaffna district, cotton, rice, and tobacco are extensively grown. Cinnamon is the chief export. The ebony, calamander, and satin woods, are most esteemed.

What are the chief animals in Ceylon?

Ceylon is less rich in the animal, than in the vegetable part of the creation, if we except its birds, but it boasts of the largest elephants in the world, great numbers of which, are caught and exported from the northern districts. An establishment of trained elephants is now kept for employment on the roads and public works. Among the woods and jungles, the ferocious buffalo exists, and the elk, stag, and deer abound. Birds of the most splendid and beautiful plumage enliven the woods and thickets; amongst which are the peacock, the jungle-fowl, a great variety of the pheasant family, also parrots, pigeons, wood-peckers and paddy birds. All the noxious and disgusting classes of insects and reptiles are abundantly generated here, amid the heat and moisture of the rich vegetable soil. Toads, scorpions, musquitoes, red, black, and white ants, infest every house; snakes too are not wanting, and of the most poisonous kind. The sea-fisheries are productive in all parts of the coast, and the pearl fishery, is still carried on in the gulf of Manaar, although of inferior importance to the common fisheries. The ancient towns of Mantotte and Putlam, probably derived much of their prosperity from the pearl fisheries.

Who was Mantotte supposed to have been founded by?

The Brahmins, as the capital of a kingdom.

What is the "Giant's Tank"?

An immense reservoir near Mantotte. It is 16 or 18 miles in extent, and would hold, if in repair, a supply of water sufficient to irrigate all the rice-grounds around it. At the distance of about nine miles from this tank, *an embankment*, constructed of immense stones, cemented *with lime*, has been laid across the Moesely or Aripo river.

in order to collect the water, and lead it by means of canals into the tank. The length of this dam is 600 feet, its breadth in some parts sixty, in none less than forty feet, and its height from eight to twelve feet.

What other remarkable monuments remain of some powerful and populous nation in Ceylon ?

In the district of Tangalle, the lake Kandelay, distant about sixteen miles from Trincomalee, and which is nearly fifteen miles in circumference, is embanked in several places, with a wall of huge stones, each from twelve to fourteen feet long, and broad and thick in proportion, laid regularly one over the other. At one point in this majestic work two hills are joined together, in order to collect the water of the lake by an embankment nearly 150 feet in breadth at the base, and thirty at the summit. In this part of the wall, arches are to be seen, and over these, in the work which is under the level of the water, an opening is made, exactly resembling the *conduttori* used by the Romans in some lakes of Italy, for letting out the water, perhaps for the purpose of irrigation.

What minerals are found in Ceylon ?

Iron is abundant in some provinces, also plumbago. Limestone occurs near Kandy. Precious stones, especially the amethyst, ruby, and cats-eye, are frequently obtained.

What is the population of Ceylon ?

It is estimated at 1,500,000, of whom the Cingalese, the Kandyans, and the Malabars, each constitute 500,000.

What is the population of Colombo ?

According to Cordiner, 50,000.

Name the province on the extreme south.

Matura, which is celebrated for its scenery, being more open than elsewhere.

Name the capital of the native rajah.

Kandy, in the province of Tallanour, and surrounded on all sides by lofty mountains.

What is its extent ?

Kandy is about two miles in length, and consists of a number of mud built houses, surrounded by a mud wall.

The only buildings of any consequence in Kandy are the temples of Buddha, and the royal palace, which is a square edifice of immense dimensions.

Where is Ramiseram?

The holy island of Rama is situate at the northern extremity of Ceylon, about twenty miles from the shore.

Where is Delft.

It is one of the cluster of islands adjacent to Jaffnapatam; it has been set apart by the government for the growing of hane or hemp, and rope-making. A valuable breed of horses is also reared upon it, at great expense.

Where are the Laccadives?

The Laccadives are a group of islands in the Indian Ocean, seventy-five miles to the west of Malabar. They are divided into fifteen smaller clusters, each of which contains two or more islands, and several dry uninhabited spots, but the largest of them does not contain above six square miles of land, and they are surrounded by coral reefs.

What is the amount of population?

About 10,000, scattered over nineteen islands.

What do they subsist on?

Cocoa-nuts and fish, and they manufacture a kind of sugar from cocoa-milk. There is a good harbour in the Isle of *Kalpeny*.

What is the situation of the Maldives?

To the south of the Laccadives and extending between the 8th degree of north latitude and the equator. These islands consist of numerous *attollons* or circular clusters, inclosing interior smooth shallow seas, and surrounded by chains of coral rocks, in general level with the water, and running from half a mile to within fifty yards of the land. Mall, in  $4^{\circ} 20'$  north latitude, is the seat of government; it is nearly circular, and not above three miles in circumference. The island is fortified all round with works mounting 100 pieces of artillery.

Name the western capital of British India.

Bombay.

How is it situated?

On a small island, connected by an artificial causeway

with the larger one of Salsette, with a fine harbour, and comprising a population of 220,000.

What is the commercial character of Bombay ?

The commerce is extensive, but that with Britain is not the chief branch, though the imports in 1835-6 were £1,250,000; the exports £1,460,000. The greater intercourse is with China, to which is sent opium to the extent, in 1836-7, of 15,000 chests, value about £1,800,000; also raw cotton in large quantities. In 1835-36, the trade with the Arabian and Persian gulfs, amounted to—exports, £585,000; imports, £552,000; the entire exports, to £4,945,000, merchandize; and £155,000, treasure; the imports, to £3,168,000, merchandize; £1,359,000, treasure. Monthly packets now run to Suez, connected with others from Alexandria to England.

What is the vicinity of Bombay distinguished by ?

The most ancient and remarkable religious structures of the Hindoos.

Name the two cities at the head of the Gulf of Cambay.

Ahmedabad, the political capital of Guzerat, now included within the British territory, and Cambay, its port.

Name the city on the shore of the same gulf, formerly the greatest emporium of India, and which at present ranks scarcely second to Calcutta.

Surat.

What is the number of its population ?

600,000.

What is the nature of its remaining trade ?

Surat introduces foreign commodities of every description into central and Western India.

What other cities of note, are in this neighbourhood ?

Dwaraca is an ancient and sacred city, and Puttem Somnath, whose temple, the richest in India, was destroyed in the eleventh century by Mahmoode the Gaznevide. Diu is situated on an island off this coast, but has lost all the importance it possessed at the time when it was conquered by the Portuguese.

What is the character of the maritime parts of Guzerat ?

That the deeply indented shores of the gulf of Cambay, afford very large scope both for commerce and piracy.

What province is to the northward of Guzerat?

The province of Cutch extending from the gulf of that name to the Indus.

What is the character of the country?

It is rather sterile, though considerable numbers of horses and cattle are reared, and cotton forms an article of export.

Who are the inhabitants?

A Rajpoot tribe called Jharejahs, subject to chiefs who boast of never having been conquered.

What savage custom are they remarkable for?

They practise infanticide to an extent beyond any other tribe, the female children having long been sacrificed, because peculiar circumstances of situation and taste preclude than altogether from the possibility of obtaining suitable marriages for their daughters.

Name the largest river entering the Gulf of Cutch.

The Lonee.

Name the province occupying the country which separates the basin of the Indus, from that of the eastern rivers of India.

Ajmeer, or Rajpootana.

What is the nature of the country?

It is a rude mountainous tract, between the Gulf of Cutch and the Himalaya.

Who are the inhabitants of Ajmeer?

It is the native seat of that remarkable military race called Rajpoots, who present, both in figure and character, a complete contrast to the other Hindoos. They are tall, vigorous, and athletic; all their habits are rude, and their only trade is war.

What are the general agricultural productions of the Punjaub?

Wheat, barley, rice, pulse, sugar-cane, tobacco, and various fruits.

What are the exports?

To the countries west of the Indus; these are sugar, rice, indigo, wheat, and white cotton goods.

Describe briefly the provinces on the Indus.

Lahore, the chief of the western provinces, with a capital of the same name, includes the greater part of the Punjaub, with a considerable extent of mountainous territory to the north. This last is by no means unproductive; the earth washed down by the rains being formed into terraces by parapets of stone. Thus all the kinds of grain peculiar to temperate climates are raised in abundance. The finer part of Lahore is that situated on the rivers; very fine rock-salt is found on the banks of the Indus, which, at Attock, is crossed by a range principally composed of this mineral.

Who now possess Lahore?

The British Government, who have just wrested this fine territory from the *Seiks*, who from a religious sect, had become a great political body.

Where is the capital of Lahore situated?

On the fertile banks of a fine river, and on the high road from India to Persia.

Name the holy city of the *Seiks*.

*Amritsir*, an open town, containing the strong fort of Govind Garrah. It is eight miles in circumference, well built of brick, and it forms the centre of a considerable caravan trade with Cashmere. To the south of Lahore is Moulton, which comprehends all the lower course of the five rivers after their union into two great channels, and thence westward to the Indus. These rivers roll through a desert; but the partial inundation, and the conveyance of the water over the fields by Persian water-works, diffuse fertility to a considerable distance on each side of their banks.

What are the chief products?

Wheat, tobacco, sugar, indigo, and dates.

What is the name of the capital?

Moulton, a fine city about four miles in circumference, and surrounded by a very handsome wall. It is distinguished by manufactures of silks and carpets; the latter in imitation of those of Persia, but of inferior excellence.

Beyond the river Gharra, which forms the eastern boundary of Moulton Proper, extends the district of

Bahawulpoor. The city of that name is as extensive as Moulton, but not so populous: a great part of its area being occupied in gardens. It is remarkable for the manufactory of loongees, or silken girdles, and of turbans. The western part of *Moulton* between the Acesines and the Indus, comprises the district of Leia. Camels are extensively employed for the purpose of travelling over the vast bordering deserts.

The lower Indus, after receiving by one channel the united waters of the five rivers of the Punjab, flows for a great space through a region, which, beyond its immediate banks, is almost entirely desert. Its character however changes, when separating into two branches, of which the westerly is the largest: it forms a delta similar to, though on a smaller scale than, that of Egypt. This delta, with a considerable extent of territory on each side, forms the kingdom of *Sinde*, which was highly flourishing while it was maintained in a pacific position under the sway of the Mogul. Its alluvial and inundated territory was kept in high cultivation, and yielded abundant crops of rice, sugar, indigo, and cotton. Tatta, the ancient Puttala, situated on the eastern branch, was then one of the greatest of oriental emporia. Under the domination of the Ameers the desolation has been increased, by converting large tracts of the finest land into jungle, with a view of affording the amusement of hunting.

What is the seaport of *Sinde*?

*Corachie*, somewhat west from the river, still retains some commercial importance. The decay of Tatta is hastened by the transference of the seat of government to *Hydrabad*.

What is its population, and the nature of its productions?

*Hydrabad* contains about 20,000 people, and there are some manufactures of arms and leather, also a pretty strong fortress on a rocky hill overlooking the Fullalee.

What was the extent of the dominion of the Ameers of *Sinde*?

In length it may be loosely estimated at 300 miles, the average breadth is 80; and this territory is intersected diagonally by the Indus.



What is the average depth of the Indus ?

From the city of Tatta to a branch called the Fulalee, it is from two to two and a-half fathoms.

What are the principal articles of home produce exported from Sind ?

Rice, ghee, hides, shark-fins, potash, saltpetre, asafœtida, bdellium, madder, frankincense, Tatta-cloths, horses, indigo, and oleaginous and other seeds.

What is known of the highest sources of the Indus ?

It is now ascertained to have its source on the north side of the Himalaya in  $31^{\circ} 22'$  north lat., and  $80^{\circ} 55'$  east long. ; about 350 miles to the south-east of Leh or Ladauk. It pierces the Himalaya range, and a little above Attock, it receives the rapid river of Caubul coming from the west.

Describe the situation and extent of Cashmere.

This country consists of a beautiful valley of an elliptical form ; bounded on the north by Little Thibet ; on the east by Ladauk ; and on the south and west by Lahore ; its length is about 100 miles, and its greatest breadth 60. It is abundantly watered, and remarkably fertile, producing luxuriant crops of rice, wheat, and barley, besides the greater part of the fruits and flowers known in Europe. Saffron is a principal article of export ; and the celebrated shawls known by the name of Cashmeres. The latter, however, though manufactured in this country, are not a native product : the long-haired goat, of the hair or duvet of which they are made, being confined to the mountainous part of Thibet. Amritsir is the great entrepot of this commerce, and the number of shawls annually exported at present is about 100,000. The Cashmerians likewise fabricate the best paper known in the east, and various lacquered and cutlery articles.

What is the population of this valley ?

It is estimated at 600,000 souls.

What is the extent and situation of the city of Cashmere ?

This city, called anciently Serinagur, is situated in  $33^{\circ} 23'$  north lat., and  $74^{\circ} 47'$  east long., about 200 miles north from Lahore. It extends about three miles on each side of the river Jalum. The Lake of Cash-

mere provincially named the *Dall*, has long been celebrated for its beauties. It stretches from the north-east quarter of the city in an oval circumference, of five or six miles, and joins the Jalum by a narrow channel. Its scenery is ornamented by numerous small islands, green with gardens and groves, and having its banks enlivened with ornamented grounds.

Describe the sources and course of the Sutleje.

The *Sutleje* or *Sutluj*, the *Hysudrus* of the ancients, has its source in the Himalaya mountains, and flows at first almost due west, and then south, bounding the province of Lahore on the east. The course of the Sutleje from the centre of the mountains to where the Beya joins it, may be estimated at above 500 miles, and their joint course to the Indus about 400 more. The converging of so many large rivers necessarily ensures a high degree of fertility in this quarter, and accordingly the *doabs*, or narrow portions of land between those rivers, near their junctions, have always, in tranquil and peaceable times, been famous for their cultivation and produce.

## CHAPTER XXXVIII.

### PERSIA AND AFGHANISTAN.

Name the region westward of Hindostan.

Persia.

What are its modern divisions?

Modern Persia is divided into eastern and western, whereof the eastern is denominated Afghanistan.

Describe the limits of Persia.

Persia consists of an extensive and lofty upland, sloping on all sides; on the south to the Persian Gulf and Indian Ocean;—on the west to the basin of the Tigris and Euphrates; on the north to the basin of the Lower Araxes, the Caspian Sea and basin of the Oxus, and, on the east, to that of the Indus. Thus considered, Persia is quite distinct in its physical features from all the countries in its vicinity.

What is the extent of Persia?

This great upland extends upwards of twenty degrees from the West of the Zagros to that of the Afghanistan mountains, or nearly 1200 English miles by ten degrees of medial breadth ; thus containing a surface of about 800,000 square miles.

Do the political divisions accord with the natural boundaries ?

By no means, the boundaries of western and eastern Persia are very indistinctly marked, and the grand and interesting boundaries this empire presented when it reached from the Indus to the Euphrates, and from the Persian Gulf to Mount Caucasus, the Caspian and the Oxus, are frittered down into two insignificant monarchies; one of which exists but in name, while the other has, by a long train of successful warfare, been greatly encroached on by Russia, annihilating its influence over the Caucasian regions, and depriving it of its provinces of Shirwan and Daghistan. In the north-east, notwithstanding the loose tenure by which the great province of Khorassan is held, and though Herat, its greatest city, has been in the hands of the Afghans, it would be yet premature to separate that province from the great empire to which it has been so long united.

How is Persia described by Sir John Chardin ?

As a country of mountains which seem not to form any continued chain, but to extend without order in all directions, and to be heaped one upon another as if thrown together at random.

What is the comparative extent of the arable land ?

It is said that if the deserts, and the varied ranges and groups of mountains which either bound or crown the great Persian plateau, be excluded, Persia contains but a small portion of arable land.

What are the rivers of Persia ?

Persia has but few rivers, and these inconsiderable. One of the largest is the Kizil Ozan, which is the *Gozan* of Scripture, and the *Amasdas* of Ptolemy. It originates in the mountains of Persian Koordistaun, in that elevated plateau where the rivers rise by flowing in opposite directions towards different seas. After a rapid course of 400 miles, generally to the east of north

it falls into the Caspian Sea, a few miles to the east of Guzelly. The *Hird*, the ancient *Gyndes*, is a large stream fully 300 yards broad at its confluence with the Tigris. The *Kerah*, or river of Shush, the ancient *Susa*, is another large stream, corresponding to the *Susian Choaspes*. It is a much larger stream at the ruins of Shush than where it enters the Shat-al Arab; much of its waters being drawn off by canals for the purpose of irrigation. The Karoon is perhaps the largest stream, in respect of volume, of any in all Persia. It is composed of two main branches, the Abzel and the Karoon, which unite at Bundikeel not far below Shushter. The combined stream is larger than the Tigris or the Euphrates, taken separately; and, after a south-west course of 100 miles below the junction, it disunites at Sabla, and enters the sea by six mouths. The delta thus formed is of large extent, being sixty-five miles long and forty broad. The Tab, the *Orontes* or *Arosis*, is the river which anciently separated Persia from Susiana. It rises at the foot of the mountains that bound the plain of Sheerauz on the west, and after a course of 180 miles enters the Persian Gulf, twenty miles south of Gudian, where it is eighty yards broad. The Araxes, the Cyrus, and Medus of Strabo, are famous in classic story, as watering the vale of Persepolis. The port of these is now called, though very inaccurately, the *Bundemir*, the second the *Kuraub*, and the third the *Sowan* or *Sewund*. The two latter are branches of one and the same river, now called the Kuraub, or Kur river. All the three united fall into the salt lake of Bakhtegan. The Attruck is the most north-east river of Persia, and is a large body of water, which after performing a north and then a western course of more than 250 miles, enters the Caspian about fifty miles to the north of Astrabad.

What is the remarkable contrast which south Persia exhibits to northern or interior Persia, in respect of rivers?

That such is the aridity of southern Persia, that in *his whole route*, as Pottinger states, from Sonmeany to Sheerauz, a journey of 1500 miles, from east to west, *the vicinity of Sheerauz was the first place where he had*

seen a running stream deep enough to take a horse above the knees.

What is the climate of Persia?

Persia is said to present three climates; that of the low tracts bordering on the Caspian Sea,—that of the great plateau itself—and that of the shores of the Lower Tigris, and the Persian Gulf. The Caspian Sea being much lower than the Ocean, its shores, of course, in summer, experience stronger and more lasting heats than do the West India Islands. Excessive humidity is the leading feature of its climate. The cold of summer is damp and unwholesome, inducing many diseases; rheumatism and dropsies are common, and diseases of the eyes still more so. The climate of the plateau, or upland, is essentially different, surrounded with mountains, on many of which snow lies perpetually. This region, from Ispahan to Candahar, experiences very hot summers and excessive cold winters. The heats of Teheran are insupportable in summer, and the whole court and most of the inhabitants abandon the place during this season, for cooler retreats. The third climate is that of the Gurmseer, a hot low region that skirts the Persian Gulf and the lower basin of the Tigris. The whole southern coast of Persia is burnt up and barren, presenting nothing to view but brown sand, grey rocks, and hardened clay.

What is the nature of the soil and productions?

The proportion of good soil is exceedingly small, and even of what arable land there is, not a twentieth part is cultivated. The once fertile province of Susiana, and the once well-wooded Farsistan, now lie waste; and the plain of Shirauz, once celebrated for its fertility and beauty, is now comparatively barren and unproductive. The vale of Merdasht, which contained the once celebrated city of Persepolis, and a population of 1500 villages, is now a dreary waste. The district of Ispahan is well watered by the Zunderood, and by numerous canals drawn from the river, for the purpose of irrigation. The plain of Hamadan, fifteen miles long by nine broad, is abundantly fertile, and that of Kermanshaw, eighty miles south-west, is the most fertile in Persia. The

Khoordish districts, in the northern parts of Persian Khorasan, are abundantly fertile ; but Khorasan is so subjected to the inroads of the Turkman tribes, that its once numerous population, flourishing cities, and extensive commerce, have disappeared.

What did the ancient lawgiver Zoroaster enjoin the Persians to do ?

To plant useful trees, and irrigate the dry lands, and to work out their salvation by pursuing the labours of agriculture.

What was the consequence ?

By thus connecting the temporal and future interest of his followers, agriculture flourished ; and under the Sassanian dynasty Persia was as well cultivated as could be expected under a despotic government, and the physical disadvantages of a dry and parched soil.

What has been the result of the extinction of the Magian faith and empire ?

That Persia has gradually declined, and the Persians, like other Mahomedans under bad governments, are content with the present, and give themselves no trouble about the future.

What are the chief vegetable productions of Persia ?

If Persia be deficient in grain, it abounds with herbs and flowers of every kind and hue. The gardens are numerous and extensive, and few countries surpass Persia in the variety and flavour of its fruits, as the fig, the pomegranate, the almond, the date, the peach, and the apricot. Khorasan is famous for its melons, of which there are twenty species. The quinces of Ispahan are the finest known ; and the vines of Sheerauz, Yezd, and Ispahan, have each their peculiar excellence. Of raisins there are fourteen kinds ; of which the violet, red and black, are most esteemed, and so large that one of them is a good mouthful. The Persian dates are exceedingly rich, their syrup being sweeter and more pleasant than virgin honey. Pomegranates attain great perfection, some of them weighing a full pound. The country also produces hemp, tobacco, opium, sesamum, rhubarb, *manna*, saffron, cotton, turpentine, mastic, and various aromatic gums. Khousar in Irak, is celebrated for its orchards.

Name the most fertile and productive districts in Persia ?

Gheelaun and Mazanderan, or the narrow stripe between the Elboorz and the Caspian. The climate is hot and humid, and the soil is watered by innumerable streams, which descend from the mountains to the sea. From September to the end of April, the whole country is one continued garden, and is covered with forests of oranges and lemons, and single and double jasmines. So beautiful is this tract, during that season, that it is denominated *Belad al Irem*, or "the terrestrial paradise." The cultivation of mulberry trees and rearing of silk worms, is the chief employment of the Gheelaunnees. The annual produce of silk which passes through the custom-house of Gheelaun is about 900,000 lbs. exclusive of what is used in home consumption.

What domestic animals are reared in Persia ?

The horses of Persia have been always celebrated as the finest. Every person acquainted with ancient history, has read of the Nisæan pastures and the Nisæan horses. They are said to excel the Arabian horses in shape and symmetry, but to be inferior in fleetness, for which reason, the celebrated Nadir Shah preferred the Arab breed to the Persian. The horses of the Chob country are remarkable for their strength, though they have not so much blood as those of the desert. Those of Shuster are large and powerful, as riding horses, but are not fit for race-horses. The Turcoman breed has been introduced into Persia; they attain a great size, and are capable of enduring extraordinary fatigue. They have been known to perform a journey of 900 miles in eleven successive days. The late Vakeel Kerim Khan, mounted on one of them, once performed a journey of 332 miles, in 58 hours. Camels are common in interior and southern Persia, and are of three kinds, but the Bactrian camel is most used for travelling. Mules are much employed, and particular care is taken of the breed. An excellent breed of the ass has been introduced from Arabia. The *gurkhur*, or wild ass, is an object of the chase; and his flesh is esteemed a delicacy. It is amazingly fleet. The forests of the

Elboors in Gheelaun and Mazanderan abound, as might be expected, in wild animals, as wolves, tigers, jackals, foxes, and boars, with the Caspian cat. Lions, leopards, and jackals, also abound in Mazanderan. Oxen and cows are kept chiefly for agricultural and dairy purposes. The cows of Mazanderan and Gheelaun are small in size; those of Interior Persia are larger, have less of the hump, and resemble the English breed. The Persian sheep are numerous and large; they are of the *Dhoomba*, or fat-tailed kind. Wool is produced in great abundance; the best is that of Kermaun, the mountains of which, hot and arid in summer, and intensely cold in winter, sustain great flocks of sheep and goats, from which, the shawls, nummuds, and other woollen fabrics of the country are made. The goats produce a down, which grows in winter at the roots of the hair, like that of the Thibet or shawl goats, and nearly as fine. This is spun into various fabrics, which almost vie with the shawls of Cachmere in warmth and softness, if not in fineness and beauty. This down, called *khoolk* in the language of the country, is formed not only in Kermaun, but more or less over all Khorasan, the mountains of which are favorable to the animals that produce it. Animals of the deer kind abound in Persia, and hares are numerous in the uncultivated parts of the country. Quail and partridges are quite common, and immense numbers of pigeons are reared by the natives for their dung, which is used as manure for melons. Eagles, vultures, and falcons, abound in the mountainous parts of the country, and the latter are much used in hunting.

What fish are known in Persia?

As the rivers are few, fish cannot be plentiful. Salt-water fish are, however, abundant both in the Caspian Sea and the Persian Gulf. The people inhabiting the coast of Mekraun and Kerman live much on this food, and were thence called *Ichthyophagi*, or "fish eaters," by the ancients. All the rivers of Mazanderan abound in fish, especially sturgeon, vast quantities of which are cured on the coasts of these provinces, and carried to Astracan.



What minerals are found in Persia?

Persia produces comparatively few—copper, lead, sulphur, iron-stone, in abundance. At Sheheraderabad, on the Goorangoo, a branch of the Kizil-Ozan, to the south-west of Meeanah, a copper mine has been discovered, and an Englishman began to work it in 1817. Of all the minerals of Persia, tourquoises have been the most celebrated. This gem is produced in the mountain of Feeroos-Koh, in the Elboors, and in a hill forty miles west-north-west of Neeshapore. These stones are found in a mass of porphyritic rock, intermingled with beds of clay, and conglomerates of the same substance, all strongly tinged with iron, and in many places pervaded with micaceous iron-ore; the tourquoise or kalaite is disseminated through this in veins, nodules and irregular masses. Marble is found of four colours, viz. :—white or statuary, black, red and black, and white and black. The common production, called Tabreez marble, has been already noticed. Mummy, a noted Persian production, is found in Kerman, near the village of Kesuiyeh. This substance is a black liquid petroleum called *moum* by the Persians, which signifies “an unguent.” It is also called *tutty*. It comes from a rock in a cavern. It is esteemed a catholicon by the Persians, and reckoned more precious than gold.

What are now the chief manufactures of Persia?

Of these the most important is silk—which is produced in every province, but Gheelaun and Mazaunde-raun are those in which it chiefly flourishes. About 270,000 lbs. are annually purchased by the Russians, and carried to Astracan; an equal quantity is sent to Bagdad and its vicinity; 180,000 lbs. are exported to Constantinople, Aleppo, and Anatolia; and the remainder is sent to Yesd, Cashan, Ispahan, and the other Persian cities where silk is manufactured. The price was in Gheelaun, (in 1822) from £3 12s. to £4 8s. per maund, of 14 lbs. English. The best silk goods are manufactured at Yesd. The chief articles are *alujahs* or shirts, and *kassabs* or trowsers, *deries* or outer vests, and *hucahuns* or men's shirts, taffetas, similar to ours, but stouter, and black silk handkerchiefs, about one and

a-half yard square, coarse and tweeled like *barcelonas*, which serve for female head-dresses. Some of them are dyed in crimson, and sell at 6s. each. Silk velvets, of very great beauty, are manufactured at Mesched, Ispahan, Cashan, and Tabreez. Satins are also produced, but those of China are preferred, being finer. Cotton is another article of raw produce, of which a great quantity is raised in Mazaunderaun, where the price in 1822, did not exceed 2s. 2d. per lb., and where its quality is fully equal to the finest Bengal cotton. The cotton goods chiefly manufactured are chintzes or printed cottons, *calamcars* or printed patterns of wreathed and consecutive flowers, sparsely thrown upon a red, white, blue, or fawn-coloured ground; *peerahueahuns*, or kings' shirts, resembling English long-cloth, which lately entirely superseded them; *rudduks* or upper vests, a fabric resembling nankin; and Ispahan stripes, blue, purple or grey; and a coarse white cloth, called *kherboz*, made for home wear in every village, and of which an immense quantity is annually carried off by the Russians. Wool, being a native and abundant production, and many of the inhabitants being of pastoral habits, a great variety of articles are made of it. The best carpets are made at Kerman, Yesd, Herat, Booroojard, and those of the Toorkomans of Khorassan, Ispahan, and Aderbeidjan. The shawls of Kerman are held in great estimation, and are only inferior to those of Cachmere. Nummuds, or fine feet-carpets, are sometimes of great beauty. The city of Hamadan has long been famous for its manufactures of leather,—as saddlery, shoes, &c. Sheerauz was once celebrated for its gold and silver embroideries; but these are now much excelled by those of Cashan and Ispahan. Its damasked steel knives and daggers are still esteemed; and a good deal of coarse glass-ware is made; but all its manufactures have declined since the death of Kerim Khan, its benefactor and sovereign.

Describe the method of making Persian carpets.

The woof is formed of two layers of coarse twine, about a quarter of an inch between the cords of each; the upper layer having its cords falling into the inter-

vals of the lower, so that the space is reduced to half. Large balls of coloured worsted are hung close by on a frame. The cords of the woof are stretched by two horizontal bars, one above and the other below, and the carpet is worked from the bottom upward. Two persons working sit before it, and beginning each towards their respective side, approach until they meet each other in the centre. The whole process consists in taking into the fingers two or three threads of worsted, of colours suggested by the fancy workers, passing them underneath a cord of the woof, twisting them a little by the hand, to secure them in their places,—and then cutting off the ends with a knife, leaving a length of perhaps half an inch from the bottom of the woof to the surface of the carpet.

What is the amount of exports between Russia and Persia, by way of the Caspian Sea?

The whole was estimated by two respectable merchants at Balfroosh at £214,000. The whole shipping employed in the Caspian commerce does not exceed twelve vessels of from fifty to one hundred tons.

Is there any demand for European manufactures?

Yes, it is on the increase, since the Persians have become better acquainted with these commodities. The chief articles of import from Europe, are silk, cotton and woollen manufactures, and sugar. The value of silk-stuffs disposed of every year at Teheran and Ispahan, is estimated at £60,000. The sorts in request are chiefly gros de Naples, levantines, satins, velvets, stuffs figured and worked with gold and silver patterns, China crapes, and white and coloured gauzes. The light stuffs form the habitual costume of the women in the interior of the harems. The whole of the printed cottons are supplied from England direct, or from Germany. Woollens have been long admired all over Persia, and the imports of these are great and increasing,—as also of chintzes and printed cottons. The Persians are supplied with brocades and embroidery by the French merchants of Lyons. Indigo, cochineal, spices, sugar, and sugar-candy are all articles of importation; the cochineal is *supplied from Russia*; the spices and indigo from India,

by way of Busheer; sugar—which is an article of large consumption in Persia, is principally supplied from England; black lamb and sheepskins are imported from Bochara; coffee, from Arabia; tin and tuthenague, from India; copper, iron, steel, porcelain and glass, from Russia; cutlery and steel goods, from England. A large proportion of the Indian products which enter Persia, are re-exported to the west, for which specie is returned. Not less than £290,000 was exported to India in return for produce imported.

What are the chief cities of Persia?

Tauris, Kasvin, Ispahan, and Sheerauz have been successively the seat of regal sway;—and at present Teheraun enjoys that honour.

What is the position of Teheraun?

It is situated in  $51^{\circ} 22' 40''$  east longitude, and  $35^{\circ} 40'$  north latitude, and is said to be the ancient *Tahora*. It is near the foot of the Elboors range, and not far from the ruins of the city of Rey—the ancient seat of the Arsacidan dynasty. Teheraun is 8000 yards in circumference, surrounded by a noble dry ditch with a strong mud wall, flanked by numerous towers. The population is said to be about 60,000.

Where are the ruins of Persepolis?

These ruins are 34 miles distant from Sheerauz, 34 miles distant to the north-east, and on the road to Ispahan. Next to the pyramids of Egypt and the colossal ruins of Thebes, these remains have arrested the greatest attention, and like them they still remain an enigma; their history, date, and object being involved in the gloom of antiquity. The site of these ruins is in the vale of Merdasht, the Hollow Persia of Strabo, watered by the Araxes, the Medus, and the Cyrus.

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#### EASTERN PERSIA.

What is known of the inhabitants of Herat and Paropamisus?

Of the character of these, or the physical geography and features of these regions, the materials are so scanty that little can be said. The Paropamisan country is

inhabited by the *Eimauxs* and *Hazaurehs*, pastoral tribes—who are a different race from the Afghans—in language, appearance, and manners. The pastoral life generates habits of idleness, and these produce poverty. The *Eimauxs* live almost entirely in camps; they keep many sheep, and rear a small but hardy breed of horses, many of which are exported to foreign countries. Like other nomadic Asiatic races, they eat horse-flesh. The *Hazaureh*, who inhabit certain districts lying to the east of the *Eimauxs*, are composed of many tribes—and generally live in villages of from twenty to two hundred houses, though some live in Tartar tents like the *Eimauxs*. The number of the population is stated at 350,000.

Name the most populous city.

Herat, or Herat—the ancient *Aria*, or *Artacoana*, which owes its importance to its fine situation in the only channel of transit between Eastern and Western Asia. It is situated in a spacious plain surrounded on all sides by lofty mountains.

What is the extent of this plain?

It is thirty miles in length, and about fifteen in breadth, it owes its fertility to the *Poolemalan* or *Heri-rood*, which runs through the centre of it;—it is highly cultivated, and covered with villages and gardens. The city embraces an area of four square miles, and is encircled with a lofty wall and wet ditch. The citadel is in the northern face, and is a small square castle elevated on a mound, flanked with towers at the angles, and built of burnt brick. It is computed to contain 100,000 inhabitants. It is the emporium of the commerce carried on between Cabul, Cashmere, Bockhara, Hindostan and Persia.

What are the articles of commerce?

From the former are received shawls, indigo, sugar, chintz, muslin, leather, and Tartary skins, which they export to Meschid, Yesd, Kerman, Ispahan, and Teheraun, receiving in return chiefly dollars, tea, china-ware, broad-cloth, copper, pepper, and sugar-candy; dates and shawls from Kerman, and carpets from Ghaen. Its exports are silk, saffron, asafoetida, pistachio nuts,

almonds, dried fruits, and rose-water. Its principal manufactures are silks of various fabrics and colours,—silken and woollen carpets, which are celebrated and in high demand over all the East for the beauty of the patterns, and brilliancy and durability of the colours; sword-blades, and cutlery.

Where is the province of Seistaun or Sigistaun?

Seistaun is separated by Mount Bagous from Herat—on the north, and extending from north-west to south-east about 300 miles, by eighty of average breadth, containing a surface of 25,000 square miles. It is full of ruined cities up to the very foot of the Beloochistaun mountains, and on the banks of the Helmund.

Who chiefly destroyed these cities?

Timoor, in his march from Seistaun to Bost. This ferocious monster, the whole of whose active life was employed in the work of destruction, and in which he pretended to have nothing at heart but the glory of God, and the propagation of the true faith, the creed of an impostor, utterly destroyed the city of Seistaun: all the inhabitants, from the infant on the breast to the man 100 years old,—men, women, and children being massacred by his orders.

Name the lake in the lowest part of this region.

It is called the sea of Zoor or Soukh, and is reckoned the lowest hollow of all Eastern Persia.

What is its extent?

According to Major Rennel, 100 miles long, by twenty broad. The water is brackish, and hardly drinkable. In its centre stands an insulated hill called the Kohee-Zoor, and sometimes the foot of Rustum.

What is observed of the effect of winds, and the neighbourhood of deserts, on this part of Persia?

That clouds of a light shifting sand destroy the fertility of the fields and gradually overwhelm the villages, and that the lake is annually diminishing, notwithstanding the vast influx of waters by the Etymandrus and its tributary streams from the whole of the western slope of the Afghanistan mountains, and also the waters of the Furrah Rood—another considerable stream from the north.

Describe the boundaries and extent of Afghanistan.

This region is bounded by Beloochistaun on the south ; by the Indus on the east ; by the Hindoo Koosh, and by the Paropamisian mountains on the west ; whilst its south-west angle is bounded by Seistaun on the south, and Herat on the north ; and on the north-west by the desert of Kerman. Its greatest extent from north to south, is in the eastern part, where its breadth occupies 6 degrees of latitude. Its greatest extent east and west is 12 degrees, or from  $61^{\circ}$  to  $73^{\circ}$  ; but in the north-east part, it does not exceed 4 degrees beyond the parallel of Caubul. The total superficies is estimated at 150,000 square miles.

What are the chief physical features of Afghanistan?

The country is divided by a great mountain range running north and south, which parts all the streams running to the Indus, from those that flow to the desert and lake of Zoor ;—Candahar, Furrâh, and Subzwar being the chief cities of the western ; Ghiznee, Caubul, and Peishawer, those of the eastern division. The country is richly diversified by every variety of surface that can be imagined. You may, in a single day in Caubul, go to a place where snow never falls, and in the space of two astronomical hours reach a place where it always lies. The Hindookoosh, in  $71^{\circ}$  east long. and  $34^{\circ} 30'$  north latitude, is by far the loftiest range on the limits of Persia, being the western prolongation of the great Himalayan chain, forming the northern boundary of Hindostan. It is visible to a vast distance, being conspicuous from Bactria, the frontiers of India, and from places far off in Tartary. The same range is continued east as far as Yunnan in China,—the greatest and grandest on the surface of the globe. The stupendous altitude of this range ; the various natives by whom it is seen, and who seem to be brought together by this common object ; and the awful and undisturbed solitude which reigns amidst its eternal snows,—fill the mind of the spectator with ineffable admiration and astonishment—such as language utterly fails in attempting to express. The height of several of its peaks, as taken by Lieutenant

Macartney, shewed an altitude of  $1^{\circ} 80'$  at 100 miles distance, which gives an elevation of 20,493 feet above the plain—an altitude surpassing that of Chimborazo, the plain of Peshawer being at least 1500 feet above the level of the sea.

What is the course of the Caubul river?

The valley in which it flows extends south and south-west, full 700 miles in a direct line to capes Urboo and Mouze, in latitude  $25^{\circ}$  north, and longitude  $67^{\circ}$  east—fifty-five miles north-west of the mouth of the Indus.

What is the breadth of the mountain chain called the range of Solimaun?

Its general breadth is from 220 to 240 miles, and in one place only 180 miles; it is parallel to the Indus, but consists of numerous lateral ridges, traversing in every direction the territories of Cabul and Candahar. The intervening territories are to be considered rather as elevated table-lands than plains, yielding the products rather of the temperate, than of the tropical climates. It is said that the plain of Ghazna, (lat.  $33^{\circ} 30'$ ) which is part of the central table-land, is the coldest spot in the kingdom.

What is the character of the climate?

Afghanistan, like India, is subject to the south-west monsoon, but in a less degree, and it is not at all perceptible at Candahar. In the plain of Cabul, the breeze in spring blows incessantly from the north. After the middle of July a cold wind sets in from the east, which produces cool and cloudy weather.

What are the principal rivers of Afghanistan?

Except the Indus, its eastern boundary, they are all fordable during some part of the year. The largest partake of the character of torrents, which, though they often come down with great force, soon run off. Their importance is also diminished from the drains made from them for irrigating the fields. The Kama rises in the territory of Kaush Kaur, and after receiving the river Cabul, falls into the Indus at Attock. The *Etymandrus*, *Heermund* or *Helmund*, rises twenty miles west of Cabul, and is composed of three small streams which meet at Gardundeewur, twenty miles below their



sources. The Helmund runs first south-west and then a westerly course of full 600 miles, falling into the lake of Seistaun called Zurrah or Zoor.

Describe the general aspect of Afghanistan.

On the north, vast mountains, high table-lands, rapid rivers; on the south, sandy and salt deserts, present a region apparently a compound of Persia and Arabia.

What are the chief vegetable productions?

In the low and favorably situated vallies, between latitude  $27^{\circ}$  and  $30^{\circ}$ , grow the date, the guava, the banana, the fig, the pistachio, the mulberry, the pomegranate, the vine, the walnut, the quince, the peach, the apricot, the almond, the cherry, and the currant. Rice, cotton, and indigo, are cultivated on the plains; but on the slopes of the hills, where severe frosts are experienced, they can hardly reckon with certainty on a slender harvest of wheat and barley.

What is the principal city of Afghanistan?

Cabul, which is situated about 6000 feet above the level of the sea, and enjoys a temperate climate, being surrounded by an extensive plain, finely watered by three rivulets.

What is the number of the population?

It is estimated, (by Burnes) at 60,000.

What is grown in the adjacent plain?

The soil is rather deficient in grain, but produces abundance of forage, and a profusion of the most delicious fruits, which are exported to India and other countries. The bazaar of 2000 shops, is considered almost without a rival in Persia.

What is the position of Cabul?

It stands in  $34^{\circ} 23'$  north latitude, and  $69^{\circ} 8'$  east longitude, on the banks of a river of the same name. Irrigation prevails everywhere. The fields are divided by a ditch of running water, and on one side, or both, is a row of mulberries, willows, sanjits, or poplars. The vegetables are, cabbage, lettuce, turnips, carrots, onions, leeks, cucumbers, gourds, beans, peas, endive, celery, and cauliflowers. The distance of Cabul from Delhi, is 839 miles; from Candahar, 282 miles; and from Calcutta, 1815 miles.

What other celebrated cities are situated in this country?

Ghizni, or *Ghuznee*, once the capital, but now comprehended within very narrow limits, not containing above 1500 houses. Bameean is on the northern slope of the mountains, and bordering on Tartary. It is a city cut out of the rock, whose cavern abodes are scattered over a surface of eight miles. Candahar is a very ancient city, the foundation of which is ascribed to Alexander the Great. It stands in  $32^{\circ} 20'$  north latitude, and  $66^{\circ} 30'$  east longitude. Its population amounts to 100,000 souls. The form of the city is an oblong square, and very regular.

What is its distance from Delhi by Cabul?

1071 miles.

And from Calcutta?

2074 miles.

What animals are most numerous in eastern Afghanistan?

Wolves, hyænas, jackals, foxes, are abundant; bears are very common in all the woody mountains. Many kinds of deer, including the elk, are found on the mountains; but antelopes are rare, and confined to the plains. Wild sheep, and wild goats are common in the eastern hills. Porcupines, hedgehogs, mongooses, ferrets, and wild dogs are numerous; and apes are found in the valley of the Kaushkaur river. In the mountains, the flying fox is found. Broad-tailed sheep is the great stock of the pastoral tribes. A long haired species of cats, called *boorauks*, is much esteemed, and great numbers are exported. Neither elephants nor rhinoceroses are now to be found west of the Indus, although the former existed in the days of Alexander the Great.

The feathered tribes, both wild, tame, and aquatic, are numerous: of eagles there are two or three species, and of hawks, many. Herons, cranes, and storks are common, as the wild ducks, geese, swans, partridges, quails, and that beautiful bird, the Greek partridge, called in India, the *hill chuckore*, and *cupk* by the Persians and Afghans. Cuckoos, which are rare, and magpies, which are unknown in India, abound in Afghanistan;

but neither peacocks nor parrots exist there. Of the reptiles, the snakes are mostly innocent; but the scorpions of Peshawer are notorious for their size and venom. There are no crocodiles; but tortoises are common.

What is the character of the province of Beloochistan?

It consists of a vast extent of rugged and rocky mountains, seared by narrow vallies or gullies, in which the way frequently leads, and serve for resting places; but down which the water sometimes rushes so suddenly as to overwhelm those who seek such shelter,—an accident under which Arian reports the army of Alexander to have severely suffered.

Name the province at the south-eastern corner of Beloochistan?

*Leia*, the seat of the ancient Oritæ, watered by the Pooralee, and containing Bayla, a town of 2000 houses, and *Somneany*, an inconsiderable fishing town.

What is the name and character of the inhabitants?

Those inhabiting the upper tracts of this province, are called Bezunjas, who are said to be pre-eminent in their rapacious habits, even above the other Belooches, "who care not for King, khan, God, or the Prophet; but murder, or plunder every person or thing they can lay their hands on."

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## CHAPTER XXXIX.

### ARABIA.

Describe the boundaries of Arabia.

It is bounded on the north by part of Syria, and the Euphrates; on the east by the Chaldean mountains, the Persian Gulf, and the Gulf of Ormus; on the south, by the Indian Ocean, and the Straits of Babel-mandel; and on the west, by the Red Sea, the isthmus of Suez, and part of Syria.

What is the extent?

From north to south the length is  $22^{\circ}$  or somewhat more than 1500 miles. The greatest breadth across from Mecca, is not less than  $20^{\circ}$  or 1200 miles, form

ing an irregular triangle, the area of which has been computed at 1,005,727 square miles. With these dimensions, and under such a climate, and in a position so central, Arabia would have been the finest country of Asia, had it possessed one essential element, that of water: deprived of this, it has, for the most part, ever borne the character of *desert*, for which its very name has become proverbial. There are, however, some brilliant exceptions, particularly the country of Yemen, which has been called the Happy Arabia; but, in general, over all the vast expanse, naked rocks, and arid sands predominate.

What is the chief physical cause of this deficiency?

It is incident to all countries under the torrid zone, in which moisture is not collected by great ranges of mountains. Lofty chains like those of Ararat and Imaus, seem necessary to pour down those mighty streams that fertilize the burning plains of Asia.

What is the most elevated portion of Arabia?

Sinai and Horeb, towering over the head of the Red Sea, and rendered famous by great events, form, probably the most elevated portion. In all Arabia, scarcely a river can be said to exist. Torrents alone are seen dashing down from the rocks, and after diffusing verdure over vallies of small extent, are absorbed in the sand. They never seem so copious as to form anything that can properly be called a lake. In the plain of Damar, the fields are watered out of deep draw-wells.

What are the most valuable plants peculiar to the country?

Coffee, probably a native of Arabia Felix, there arrives at the greatest perfection. The plant grows to a height of forty or fifty feet, with a stem four or five inches in diameter. The *Mocha Coffee* is distinguished from the coffee of other countries by the roundness and smallness of the grain, the reason for which, is, that one out of the two seeds in the berry, is abortive, and the other assumes a rounded form, for want of the *mutual pressure* that would otherwise have been given.

The superior quality depends partly on the time and manner of gathering the Mocha coffee, and still more,

perhaps, on the soil and site chosen for the cultivation of the plants. The best sort is grown on the mountains of Hadje, about sixteen miles east of Beit-el-fakieh. All the gardens there are situated on platforms one above the other: some are only watered by rain, in others, there are large reservoirs on the higher parts, whence the running water is conducted and distributed over all the beds, where the trees are generally grown so close together, that the sun cannot make its way between them. *Balsam, frankincense, and myrrh, gum, aloes, senna, and tamarinds*, are other staple commodities of Arabia, that have given the country a name and a rank among commercial nations. The fruits of temperate and warmer climates are equally grown in Arabia. Gourds and melons, cocoa-nuts, pomegranates, tamarinds, dates, apricots, peaches, almonds, filberts, pears, quinces, figs, oranges and lemons, and even the mangosteen. The Arabians raise also a great quantity of "dhurra," a sort of coarse millet, which is extremely fructiferous, and forms their chief article of food.

What animals are known in Arabia?

Arabia, in common with the whole extent of Northern Africa, Persia, and Western India, possess the camel, the wild ass, and the dromedary, to which travellers also add lynxes, jackals, hyænas, monkeys, jerboas, and various panthers. The Arabian horses are known to be the finest in the world. The wandering Arab of the desert places his highest felicity in his horses, and is so attached to them, that they are more his companions than his servants. This extraordinary domesticity gives the horses of the desert a tractableness and docility which no other breed possesses. Whenever they feel the touch of the hand or the heel, they dart away with the velocity of the wind: if their rider be dismounted in his career, they instantly stop till he recovers his seat, or if he fall in battle, they remain by his side, and neigh over him. It is by these tribes, that nearly all the horses are bred; and they are known under two denominations.—*Kadeschi* are horses of an unknown race, and *Koehlani*, those whose genealogy is known for 2000 years; this race, the

assert, originated from the stalls of Solomon. The horses of this noble race are sold at enormous prices, but no consideration whatever will induce the Arabs to part with the mares. An Arabian will generally carry his master from eighteen to twenty leagues in the day. They perspire little, and possess in the most eminent degree the qualities of endurance, vigour, and admirable temper.

There is a race of oxen in Arabia, with a hump on the back, like those of Syria. The rock-goats inhabit the hills of Arabia Petræa, and the plains are stocked with gazelles; antelopes inhabit the deserts.

The camel is the most serviceable animal of Arabia. It has well been called the ship of the desert, for without it the Arab could not cross the seas of sand, with which his country is covered. Its hoof is formed to tread on burning sands; it is patient of thirst, and the cartilaginous texture of its mouth enables it to feed upon the hard and prickly plants of the desert. Its milk is copious, and the flesh of its young, tender. Its dung supplies the deficiency of fuel, and its hair is manufactured into garments. Four complete days, form the general extent to which Arabian camels can endure the want of water during summer. The Darfur camels bear thirst much longer, often to the extent of nine or ten days. The Arabians possess a breed of asses, which in beauty, vigour, and spirit, rival even the horse. The Moslems use them in their long and painful journeys to Mekka; and in Yemen the soldiers perform their patrols upon them. They are more patient of fatigue, and more easily foraged, than the horse, and therefore better fitted for travelling. Mules are not much bred in Arabia.

Of birds, the Arabs have poultry in abundance: guinea-fowl are common in the hilly parts, and pigeons in the woody districts. The red-legged partridge, pheasants and bustards, plovers, storks, &c., are also found in places adapted to their habits. Ostriches, called by the inhabitants, the camel-bird, are to be found in the desert. A beautiful lap-wing, called *hudhud*, is also common on the shores of the Persian Gulf. Eagles,

Egypt, at the northern extremity of the Red Sea. It was peopled by the Amalekites, the Cushites, the Moabites, the Ammonites, and the Edomites. Petra was its capital, the same as Joktheel in scripture, now Krac or Karac.

What is the present state of Arabian commerce?

Before the Portuguese discovered the Cape of Good Hope, the Arabians monopolized the whole of the trade with India. But after the opening of that communication between the eastern and western worlds, the commerce of Arabia rapidly declined. Coffee is the staple article of commerce; and great quantities of it are exported from the ports of Mocha and Loheia. It is computed that 12,550,000 lbs. weight of this article alone, is yearly exported. The European companies take off a million and a-half;—the Persian, three millions and a-half;—the fleet from Suez, six millions and a-half;—Hindustan, Maldives, and the Arabian colonies on the coast of Africa, 50,000,—and the caravans, a million. The other exports of Arabia are gum-arabic, myrrh, aloes, almonds, balm of Mekka, frankincense, and some aromatic and medicinal drugs. As their own manufactures are very contemptible, their imports consist chiefly of articles of ornament and apparel, weapons of defence, and corn. From Europe, they receive silver, iron, copper, lead, fire-arms, and gun-powder; from Abyssinia, sheep, elephants' teeth, and musk; from the eastern coast of Africa, gold, slaves, amber, and ivory; from Egypt, rice, lentils, sugar, and oil; from Surat, linen; and from Coromandel, cotton. But the imports are very heavy throughout Arabia. At Mocha, the value of a fourth of the ships' cargo of coffee must be paid to the Imaum before it can be exported; and at Djidda, Europeans pay eight per cent; all other nations thirteen. The most valuable traffic of Arabia is still carried on by means of caravans, and pilgrims often mingle their devotion with commercial speculations.

What is the amount of the population of Arabia?

Balbi estimated the number at 10,000,000—others calculated the number at about 12,000,000; but certainty



wrought, sometimes it was found in the body of the rock and sometimes in loose nodules on the surface. At present, however, no indications are known. The *onyx* is common in Yemen, and in a hill near the town of Damar—is found the *ayeh jemanni*, a stone held in high estimation among the Arabians themselves. The agate, called the Mocha-stone, comes from Surat, and the finest cornelians, from the Gulf of Cambay. Rock-salt is still worked near Locheia and in other places. To this day our knowledge of the natural productions of Arabia is extremely limited.

Locusts in vast numbers, and of different species, periodically devastate this and the neighbouring regions of Africa, from whence they have emigrated, at distant intervals, to Sicily and the south-eastern shores of Europe.

What was the ancient name and character of Arabia Felix?

It was formerly designated Sabæa, and in Scripture, Sheba. Combined with the eastern part of Hadramaut, it formed the kingdom of the Himyarites, or Homerites, whose power and wealth are greatly celebrated in antiquity.

What traces have been recently discovered by Lieut. Welsted of its former prosperity?

The remains of Nakab al Hajar, consisting of a wall 800 yards long and thirty or forty feet high, most durably and skilfully constructed, but the interior was in ruins. Similar monuments are said to be extant in other parts of the country, which seems to have been indebted for this prosperity to its own fertility, joined to the trade of India and Africa.

What portion is termed Arabia Deserta?

It extended on the north and east, as far as the Euphrates, which separated it from Mesopotamia and the Arabian Irak. It was the country of the ancient Nabatheans—and the people of Kedar, answering to the modern Bedouins. Part of it, towards the east, is supposed to be the "land of Uz:" its chief city was *Palmyra*. Arabia Petræa comprehended the tract of country south of the Dead Sea, between Palestine and



Egypt, at the northern extremity of the Red Sea. It was peopled by the Amalekites, the Cushites, the Moabites, the Ammonites, and the Edomites. Petra was its capital, the same as Joktheel in scripture, now Krac or Karac.

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What is the amount of the population of Arabia?

Balbi estimated the number at 10,000,000—others calculated the number at about 12,000,000; but certainty

on this point cannot be arrived at. The whole are divided into two classes—the Arabs of the desert, or Bedouins, and the Arabs of the cities.

Describe the Bedouins.

They are the *Arabs Scenitæ* or “Arabs dwelling in tents”—of the ancients. They occupy the site, and are the lineal descendants of the Arabs mentioned in Scripture, and by the Greek historians. They retain, moreover, the same manners, customs, superstitions, and prejudices. They always live in encampments, pitching their tents wherever they find pasturage, and changing their abode as often as the support of their cattle, or the approximation of an enemy makes a change of place expedient. They never occupy towns or even houses, and are not engaged in agriculture, being strictly a pastoral people, supporting themselves almost entirely on the produce of their flocks and herds, or the hire of their camels.

Describe the Arabs of the cities.

The Arabs of the cities are more indolent and effeminate than those of the desert; but notwithstanding their different manner of life, and intercourse with other nations, their character is not materially different. They are equally distinguished for their hospitality and vindictive spirit, forming either firm friends or implacable enemies.

Name the most remarkable places in the peninsula of Mount Sinai.

Mount Sinai, celebrated in sacred history, as the spot whence the law, written with the finger of God, was delivered to Moses, is an enormous mass of granite rocks, near the head of the Red Sea—situated 150 miles south-east of Suez, in the centre of a vast and gloomy desert. It is the highest summit of a chain of mountains called by the Arabians Djebbel Moosa, which chain, contains several fertile vallies, where the rose of Jericho, the bitter apple, dogs-bane, the tamarind tree, and various other plants and fruits flourish.

It is only of late that the ruins of Petra—the ancient capital of Arabia Petræa, have come to light.

These ruins consist of numberless tombs and temples, excavated in the craggy precipices of an extensive valley.

Where is the district of Hedjaz ?

Hedjaz, or "the land of pilgrimage," has Nedjed, on the east, Yemen on the south, the Syrian desert on the north, and the Red Sea on the west. Hedjaz is said to comprise the *holy land* of Islam.

Name the three most important towns in Hedjaz.

Djidda is the most flourishing sea-port of any on the Red Sea. It is situated in latitude  $21^{\circ} 33' 14''$  north, longitude  $39^{\circ} 6'$  east of Greenwich. It is handsomely built on the shore of the Red Sea—contains from 12 to 15,000 inhabitants, and is enclosed on the land side by a wall which affords sufficient protection from the Arabs, who have no artillery. From the sea it is entered by two quays, and from the adjacent country by two gates. The houses are generally furnished with cisterns to hold rain water, which is better than that of the wells. The inhabitants are almost exclusively strangers, consisting of a mixture of races, partly owing to the mercantile character of the place ; but chiefly to the pilgrimage to Mekka, as many of the pilgrims marry Abyssinian slave-girls, and settle in the town. The commerce of Djidda consists of the coffee and Indian trade. Mekka, the birth-place of Mahomet, is situated in a narrow sandy valley, about 13 leagues east of the Red Sea, and 70 south from Medina. The present population is said to amount to 25 or 30,000, with 3000 Negro and Abyssinian slaves. Mekka is without trees, gardens, or verdure ; and water of good quality must be brought from the distance of twenty miles. In this holy city is the great mosque, called the Beitallah, or house of God, one of the largest structures in the Mahomedan world.

Medina, situated on the edge of the great Arabian desert, contains the tomb of Mahomet, and that of his great successors, Omar and Abu Bekr, &c. The town is small, but its environs, unlike those of Mekka, are fertile. The whole population is from 16,000 to 20,000.

Tayf stands in a sandy plain, encompassed by low mountains, called Djebal Ghazoan.

Where is Nedjed ?

The vast deserts of Nedjed are on the east of Hedjaz, and comprehend the country called by the ancients *Arabia Deserta*. From the confines of the canton of Hauran to the banks of the Euphrates, the whole is one immense desolate plain, called El-Hamad, the scene of the wanderings of various Arab tribes. To the south of this plain, the caravans of Damascus, on leaving Esrak, follow for seven days the channel of a dry river, which leading south-east brings them to Djof, where stands a high pyramidal tower. After this, there is another desert, behind which, rises Mount Shammar, (the Zametas of Ptolemy) covered with trees and villages. The desert of Akkaf separates Nedjed on the south and south-east, from Yemen and Oman.

Yemen is the finest and most powerful province in Arabia. Its extent and population is estimated at 53,000 square miles, and two millions and a-half of inhabitants. The principal towns of Yemen are,—Sana, Aden, Mocha, Beit-el Fakih, Loheia, and Zebid. *Sana* is at present the capital of Yemen. It stands in north latitude,  $15^{\circ} 21'$  at the foot of a mountain called Nikkum.

*Aden* has been celebrated from the remotest antiquity for its commerce and the excellence of its harbour. It is now in the possession of Britain.

*Mocha* is situated on a small bay of the Red Sea, in latitude  $13^{\circ} 20'$  north, longitude  $43^{\circ} 20'$  east. It is well known for its exports of coffee. The population is estimated at 5,000.

*Beit el Fakih* owes its origin and name to the saint, Achmed Ibn Mousa, whose sepulchre is shown in a mosque near the town. Its situation is very favorable for trade, being only half a day's journey from where the coffee is grown, four days from Mocha, about six from Sana, and four and a-half from Locheia. The coffee trade attracts to this place merchants from Hedjaz, Egypt, Barbary, Syria, Persia, India, and even Europe.

*Locheia* is the most northern port in the dominions of the Imaum. It stands in latitude  $15^{\circ} 42'$  north. Its territory is arid and barren.

*Zebid*, before the harbour was choked up, was the most commercial place in the Tehama. It is situated between five and six leagues south-south-west of Beit el Fakih, near the largest and most fertile *wady* or torrent in the country.

Hadramaut is bounded on the north by a desert, on the north-east by Omman, on the south-east by the sea, and on the west by Yemen. It includes the mountain districts of Seger and Mahrah, where frankincense grows. The harbours of Seger are, Hases on the great gulf of Kuria Muria, surrounded with isles; also Merbat and Dasar. Hadramaut exports frankincense, gum-arabic, dragon's blood, myrrh, and aloes, which last is obtained from the island of Socotora. It has also a few manufactures, and supplies Yemen with coarse cloths, carpets, and the knives called jambea, which the Arabs wear in their belts.

Omman comprehends the coast extending from the eastern extremity of Cape Ras al Khad, or Rasalgate, to the entrance of the Persian Gulf. The interior is little known, but the coast is diversified by ranges of mountains, and well watered, so that it abounds in grain and fruit. The inhabitants are the best seamen in Arabia. Their vessels have this peculiarity,—that the planks are not nailed, but tied or sewed together. Muscat, containing from 10,000 to 12,000 inhabitants, is the largest city and principal port of Omman; and was in ancient times as it is now,—the *entrepot* of the merchant goods of Arabia, Persia, and the Indies.

Hajár or Lachsa.—The province of Hajár or Lachsa, occupies nearly the whole of the north-western coast of the Persian Gulf. Great part of the interior consists of sandy plains, but the coast is fertile and well-peopled.

Lachsa is its capital, and is situated near the mouth of the Astan, opposite the Bahrein islands. Katiff and Keneit are other considerable towns, the inhabitants of which subsist chiefly by pearl fisheries. The piracies committed by the sailors on the coast were, within this

century, so extensive, that in 1809 the British fitted out an expedition for the purpose of chastising them. They took Ras-el-khima, the principal port on the coast, burned seventy vessels, and made considerable plunder. The Bahrein islands, on the south-west side of the Persian Gulf, near the coast of Arabia, may be considered as part of Lachsa. The richest pearl fishery in the world is prosecuted at these islands. The principal of them is the Anal, anciently the Tylos, which is situated ninety miles west-north-west of Bushire.

Describe the port on this coast taken possession of by the British Government in 1837.

Aden is situate in  $12^{\circ} 45' 10''$  north latitude, and  $45^{\circ} 9'$  east longitude, and just divides the distance between Bombay and Suez. The promontory of Aden comprises a hill 1776 feet above the sea, and is five and a quarter miles in length, its breadth varying from two and a quarter to three and a-half miles. The isthmus of sand which connects it with the main-land is, at high water, 1,360 yards broad. Two bays are formed by this peninsula—one on the eastern or town side, and the other on the western; the latter is at its entrance four miles broad, and runs up to a distance of seven miles; the anchorage is excellent and of great extent; steamers may run in during the night, and load and unload at all seasons in perfect security, close to the shore. Under British protection, Aden once the chief mart of Arabia, might again become the port of export for the coffee, gums, and spices of that country, and the channel through which the produce of India and England might be spread through the rich provinces of Yemen and Hadramaut. Vessels from Burbura, on the Soomalee coast opposite to Aden, with gums, frankincense, elephants' teeth, &c., can run across in a day in the north-east monsoon, and return in another: it is as near the coffee districts as Mocha, and Sana is quite as close. Being singularly adapted, from local circumstances, as a depot for coals, it is expected that Aden may attain somewhat of its former commercial celebrity.

What other line, besides that through the Red Sea, was contemplated for steamers plying between the Mediterranean and India?

That by the River Euphrates and the Persian Gulf, which is still more direct, indeed the distance between Bombay and the Mediterranean would be shortened one-third by passing through Aleppo and Antioch in one day's land travelling.

Name the island off the north-east cape of Africa.

Socotora or Socotra, situated about 45 leagues from Cape Guardafui, and 1200 miles from Bombay. It is about 80 miles long and 20 broad.

Name the principal town.

Tamarida.

To whom does this island belong?

It is governed by a Shiek, who is subject to the Imaum of Muscat. The soil is dry, and almost destitute of water and vegetation; nevertheless, in the sheltered vallies, the best aloes, as well as dates, are produced. It abounds in goats and poultry, but there are few oxen.

## CHAPTER XL.

### AFRICA (EAST COAST.)

Name the point on the Red Sea from which a communication could be opened with *Adowa* in the interior of Abyssinia.

Arkeeko.

By what place is the foreign commerce of Abyssinia now carried on?

By way of Massouah.

What are the imports?

Lead, block-tin, gold-foil, Persian carpets, raw silks from China, French broad-cloths, coloured skins from Egypt, glass beads and decanters from Venice.

What are the principal wild animals of Abyssinia?

Among these, perhaps the most numerous and characteristic is the hyæna (*felis crocuta*), called here the *dubba*, which appears to be the fiercest and most untameable of animals. In many parts of the country they are so numerous as to place travellers in continual danger. Elephants, and rhinoceroses are numerous in the low grounds. They are hunted by the Shangallas who use

their teeth as an article of commerce, and feed upon their flesh. There is a species of rhinoceros with two horns, *arive harisi*, found in a few districts; its skin, which has no folds, is used for shields, and its horns for handles to swords. The antelope is common on broken ground near the rivers. The buffalo, domesticated in Egypt and elsewhere, is here one of the most ferocious of animals; he lodges himself in deep and sultry vallies, under the shade of the tallest trees, and near the largest and clearest rivers. Hippopotami and crocodiles abound in all the rivers. The lion is met with occasionally, and there are several species of leopards, one of which is black. The zebra is frequent in the southern provinces.

What are the domestic animals?

The most remarkable is the Galla ox, bearing horns of enormous magnitude extremely disproportioned to his body. The horses are strong and beautiful. Large black sheep and fine white haired cattle are abundant. The giraffe is sometimes met with.

What birds or insects, are met with in that part of Africa?

The *nisser*, or golden eagle, perhaps the largest bird of the old continent, and a beautiful species called the black eagle, are mentioned by Bruce. A new species, the size of the common falcon, has been found since by Salt. Storks, snipes, red-legged partridges, pigeons, and swallows, occur in great number and variety. Among insects, the most numerous and useful are the bees: honey constitutes everywhere an important part of the food of the inhabitants, and several provinces pay a large proportion of their tribute in this article. The honey assumes different appearances, sometimes black, sometimes blood-red, according to the plant on which the insect feeds. The locust here commits great ravages: serpents are not numerous. A large fly is found, whose sting is said to be dreadful, even to the lion, and a destructive species of the black ant.

What minerals are found in Abyssinia?

The mineralogy of that country is very imperfectly known, for the gold which passes through it, is brought from the barbarous countries to the south and west. One



of the most important productions of the country is salt. A great plain of salt occupies part of the tract between Amphilia Bay and Massouah : it covers a valley about four hours' journey across : it is perfectly pure and hard for about two feet deep ; but that lying beneath is coarser and softer, till purified by exposure to the air ; it is cut into pieces, like a mower's whetstone, which not only serve for seasoning to food, but even circulate as money.

Describe the situation of the kingdom of Adel.

This country extends from the Straits of Babel Mandel, or the frontiers of Abyssinia, to Cape Guardafui. It is sometimes called *Zeilah* from a seaport of that name on the Arabian Sea. It is bounded on the west by the countries of *Gingiro* and *Belubba*. Towards the south-east the country is altogether a desert ; but the soil in other parts is luxuriant. A considerable number of cattle are reared. The cows have horns as large as those of the stag ; the sheep have a dewlap nearly reaching the ground, proving the identity of this species with the ram occasionally represented on ancient marbles. The inhabitants are called Berberes by the Arabian geographers : their religion is Mahomedanism. They conduct a trade in slaves, gold, silver, ivory, oil, honey, frankincense, and a sort of pepper. The *Navaeh*, or *Hamza*, waters the western part of this territory ; but appears to lose itself in the sands.

What are the principal towns.

Zeilah, the capital ; *Barbara* or *Berbera*, an ancient trading port to the south-east of Zeilah ; and *Aucagurel* or *Auxa*, south-west from Zeilah, in the interior. This state was formerly subject to Abyssinia ; but in 1535 the Adeliens placed themselves under the protection of Turkey. They are governed by an Imam.

Describe the territory of Ajan.

Ajan, the Azania of the ancients, lies along the Indian Ocean, between Adel and Zanguebar, or Cape Guardafui and Magadoxo. It is a country almost entirely unknown. The northern parts are however hilly and beautiful, and may be considered as forming the native country of incense, myrrh, and odoriferous gums. The celebrity of

Arabia, and particularly of Aden, for those productions is chiefly acquired by its large imports from this coast. At the town of Berbera is an annual fair, where, according to Lord Valentia, there are sold 15,000 bahars (320 lbs each) of gum, at £3 12s.; 2,000 bahars of myrrh at £4 12s.; frankincense to any extent demanded at £1 15s. Even gold and ivory are said to be brought from Hassim, a country situated twenty days' journey in the interior.

What rivers fall into the Pacific from the coast of Africa further south?

There is scarcely a stream of any note from Cape Guardafui to Pattah in lat.  $2^{\circ} 15'$ , S.

Name the country along that part of the coast.

Zanguebar.

Between what latitudes?

Zanguebar is considered to extend from  $3^{\circ}$ . or rather from the equator, to  $10^{\circ}$  south lat.

Name the principal territories included in this region?

These are: Pate, Jubo, Mombaza, Lamo, Melinda, and Quiloa,—this last was found by the Portuguese a seat of power and commerce; it is about 100 miles north-west from the bold promontory of Cape Delgado. The island of *Quiloa*, with the city of the same name, is situated opposite to a peninsula formed by two great rivers, the most important of which is called *Coaro*. The coast, which is low, marshy, and consequently unhealthy, is said to abound in elephants; and to produce all the tropical fruits and vegetables common in Africa. The articles of trade are, gold, ivory, slaves, drugs, wax, and ostrich-feathers. *Mombaza* is an island in  $4^{\circ} 3' 8''$  lat. and  $39^{\circ} 31'$  E. long., about fourteen miles in circumference, situated at the mouth of two rivers, about 200 yards from the mainland. It is very fertile and rather high, forming a kind of natural castle. The country produces corn, and is fit for the growth of sugarcane. The harbour is excellent, and a considerable trade is carried on along the coast in dows, often of 250 tons burden. Britain for two years maintained a factory there, but withdrew it in 1827. It was at one time fortified very strongly by the Portuguese, who were driven

out by the Arabs of Muscat in the year 1631. The chief commerce is ivory and gum-copal, which articles are brought into the island by an inland tribe, called Whanekas. *Melinda*, long the handsomest and most flourishing city on this coast, has been completely destroyed by the Galla.

Who are the *Galla*?

The same ferocious race who have overrun Abyssinia, and who, in the course of a furious warfare, have destroyed every seaport on the eastern coast which was not protected by an insular position.

What is the state of Patta?

Patta was once of great importance, but is now much decayed, and a great part of its trade transferred to the neighbouring port of Lamoo. Brava, within the territory of Magadoxo is also a port of some consequence.

What islands occur off the coast of Zanguebar?

Parallel to this coast, at a distance of about twenty or thirty miles, are the small but fine islands of Pemba, Zanzibar, and Monfia. They are of coral formation, but the surface is flat, and covered with a soil highly productive of grain or sugar. Zanzibar, subject to the Imam of Muscat, is a prosperous place, and has the most flourishing trade of any in this part of Africa.

What is its population?

It is supposed to contain 150,000 inhabitants.

What other islands occur off that coast?

Northward from Mozambique, occur the Querimba Islands, giving name to the opposite coast. They were laid waste by the Portuguese at their first arrival, but were afterwards re-peopled by colonists from Mozambique. They have suffered, however, by attacks from the Madagascar pirates.

Describe the settlement of Mozambique.

The city of Mozambique is situated in east long.  $40^{\circ} 40'$  and south lat.  $15^{\circ} 2'$ . It is the principal establishment of the Portuguese in Eastern Africa. It is built on an island, which has a good roadstead, and a commodious pier, but affords by no means either a convenient or healthy situation. The principal inhabitants have their houses at Mesuril, on the continent, at the extre-

mity of the peninsula of Caboceiro. There is a fort sufficient to defend it against the pirates who infest these seas, but not to secure it against the attack of any regular force. This grand emporium of Eastern Africa was rich, conspicuous, and flourishing, long before it was known to European visitors. Its central situation, so eligible for the command of the trade of the eastern coast, Madagascar, Arabia, and the Red Sea, induced the Portuguese to establish a settlement here. The merchants of this place derive their opulence, and the city, its magnificence, from the immense slave trade, which was till lately carried on; but with the decline of that traffic, every Portuguese settlement suffers. Though Mozambique derives its importance from being the emporium of the gold, ivory, and slaves, brought down the Zambese; it is situated about 300 miles from the mouth of that river, and the trade is in a great measure transferred to Quillimane.

The adjacent shoals abound with many varieties of curious and beautiful shells, which are sought for by the poorer natives for the fish which inhabit them. The waters are also well stored with fish, particularly two or three very fine species of *sparus*, and as these form the chief food of the natives, the harbour and offing are generally seen covered with fishing vessels.

What is the position of Mocaranga?

This territory, better known by the name of *Monomotapa*, is bounded on the north by the coast of Mozambique; on the east by the Indian Ocean; on the south by the territory of Delagoa; and on the west by countries in the interior, of which we are entirely ignorant, but which are supposed to be possessed by those tribes who have received the general appellation of Caffres.

How is this region watered?

Mocaranga is watered by several considerable rivers, of which the Zambeze is the chief. It is said by the natives to rise from a great lake: it forms in its course a grand cataract, and enters the sea by several mouths, one of which, the *Quillimane*, is occasionally described as the main river. In April, it overflows the country, producing great fertility although a large portion of it

is uncultivated, and covered with forests, which, however, shelter numerous herds of elephants, whose teeth afford an important article of commerce.

What other articles of commerce are furnished by the country?

Gold is said to abound in the interior, especially at *Zumbo* in south lat.  $18^{\circ}$ , and east long.  $27^{\circ}$ , whither it is brought from *Abutua*, a distance of 360 miles to the westward. To the same spot considerable quantities of ivory come, which are said to be procured in the countries along the Orange River.

Of all the Portuguese settlements on the coast of Africa, *Sofala*, included by some geographers in the kingdom of *Botanga*, appears by far the most productive in gold dust. It is the Ophir of this part of the world, and there is every reason to suppose that it exported large quantities thereof, long prior to any European intrusion. The Portuguese still maintain a fort here; and a vessel carries annually, from Mozambique, coarse cotton and other articles, in return for which it receives gold, ivory, and slaves. *Zimbao*, at the upper part of the Manica River, is the residence of the king of the river and of the territory of the Sofala. The Portuguese have two fairs here, at which the inhabitants of Sofala and Sena traffic. *Sena*, on the upper Zambeze, is about 40 or 50 leagues distant from Manica, the intervening states being Barra and Macumba. At Sena and Tote they possess merely two small forts, erected for the protection of their trade, with two still smaller in the more remote stations of Zumbo and Manica. In these settlements, joined to that of Quillimane, they maintain 264 troops. The ground being generally fertile, and abounding particularly with honey and wax, also with senna, and other drugs, they draw from the land attached to these stations a revenue of 2,900,000 reis. The Portuguese and African slave merchants have often conducted convoys of negroes from Angola, on the west coast of Africa, to Sena on the east; and from Sena to Angola. The two ports of *Pedras Negras* in the interior of Ango, and *Chicova* in the interior of Monomotapa, are the respective points of departure. The distance is said to be 325 leagues, and

its performance occupies a whole season. Wandering herds are frequently encountered ; and elevated plateaus are crossed, where gold-dust is collected.

Where is *Inhambane* ?

This province stretches along the coast between Sofala on the north, and the Bay of Lorenzo-Marquez on the south. The lance, or *assagye*, is here the favourite weapon. This province formerly exported vast numbers of slaves to the Brazils. There is an excellent harbour, defended by a fort and 150 men. About 100,000 lbs. of ivory, and some wax, are sent to Mozambique. Quilimane, at the mouth of the Zambeze, is now the chief seat of trade on this coast ; the situation is swampy and unhealthy.

What other territory intervenes between Mocaranga and the Cape of Good Hope colony ?

Delagoa Bay (" Bay of the Water,") is so named, probably, because of three rivers which empty themselves into this Bay. The *Manica*, which is the most northern, was once navigable, but the navigation is now obstructed by a bar at its mouth. The *Machavanica*, the most southern, is navigable 30 leagues from its mouth, by boats which draw six feet of water. The River *Delagoa*, the central river, is distant about 80 leagues from the *Machavanica*, and is navigable for nearly 200 miles by large boats, and for more than 40 miles by vessels which draw twelve feet of water. It has a bar with about fifteen feet on it at low water ; about two miles up the river, vessels lie in sufficient depth and safe from every wind. Delagoa Bay is a commanding expanse of water with several woody islands ; its navigation for vessels of burden is extremely intricate, but this difficulty surmounted, it has natural advantages of which few places can boast, in the richness of the country, the great quantity of ivory, gums, and other valuable commodities which the natives bring in from the interior, and the number of cetaceous animals with which the bay abounds.

What are the other natural productions ?

Rice and maize are sown in December or January. The dry season lasts from April to October. Many species of fruit are found ; and sugar-canes are plentiful.

The forests are inhabited by the panther, rhinoceros, antelope, wild-hog, hare, and rabbit; tame cattle are abundant. Among the fowls may be numbered wild-geese, ducks, quails, partridges, Guinea-hens, and several species of singing-birds: turtles are taken upon some of the islands on the coast. Many kinds of excellent fish are caught in the rivers and seas. The rivers of Delagoa swarm with the hippopotami, and numbers are annually taken, being either entrapped, or wounded by assagayes, so as to cause their destruction. The forests are inhabited by vast herds of elephants, equal in number to those found in any part of this extensive country. Captain Owen was informed that 120 tons of ivory were commonly received at Mozambique annually from this settlement, and that this quantity was in no way considered any extraordinary importation.

What is the character of the climate?

It is said to be healthy; but it would appear that there are pestiferous swamps to the south of it.

The Portuguese lay claim to the entire coast between Cape Guardafui northwards, to the first point of Natal southwards, a tract of coast of about 2,600 miles.

What are the chief vegetable productions of the country along the east coast of Africa?

Two interesting and useful plants, amongst many others, deserve our particular notice; the first is the Colombo plant, of which the root is a well-known article in the Pharmacopœia, as of singular efficacy in strengthening the stomach and bowels, and curing the cholera morbus, dysentery, and other diseases of the alimentary canal. It has been long used in the East Indies, though its history and native country were involved in obscurity, some having supposed it to be a native of Colombo, in Ceylon, because of its name. It is now ascertained that it grows naturally in the thick forests that cover the shores of Oibo and Mozambique, as well as inland for several miles. The natives never cultivate it, the spontaneous produce being sufficient; after digging up the root, they cut it in slices, and stringing them on cards, dry them in the sun. It is held in high esteem by the people, who use it for the cure of dysentery, for healing



ulcers, and as a remedy for almost every disorder. The late Sir Walter Farquhar, physician to the king, was very desirous to obtain the Colombo root in a living state, and after many fruitless endeavours, made by his son, Sir Robert Farquhar, governor of Mauritius, who was opposed by the Portuguese authorities on various pretences, but mainly because they were unwilling to permit the exportation of so valuable an article, he finally succeeded in obtaining, through Captain Owen, of His Majesty's ship *Leven*, growing roots of the Colombo plant. These were distributed to the Mauritius, New Holland, the Seychelles Islands, &c., "and it is thus to be hoped," adds the botanist, "that this valuable plant may be naturalized in these countries, and that its culture may be rendered an object of industry and resource to the planters of the Mauritius." The second is the *Telfairia volubilis*, a climbing plant lately discovered on the coast of Zanzibar, of very easy cultivation; and producing an esculent fruit, three feet long, and full of seeds as large as chestnuts (264 in one fruit), which are as excellent as almonds, and of a very agreeable flavour; they also yield an abundant oil, equal to that of olives. It was originally brought by M. Bojer, of the Mauritius, from Pemba, on the shores of Zanzibar, where it grows in the forests enveloping the trees with its branches, and sometimes with a stem eighteen inches in circumference. The seeds have been distributed to Bourbon, and New Holland, and, by the missionaries, to New Zealand and Tahiti. At Mauritius, it has thriven so well, that it produced stems 30 feet high; and in the stove of the late R. Barclay, Esq., of Bury Hill, to whom Mr. Telfair sent seeds, it grew so luxuriantly, that the pruning knife was in constant requisition to prevent its filling the whole house.

What African islands lie to the eastward of this coast besides the large island of Madagascar and the Comoras?

The French Isle of Bourbon, or Mascarenha, is situated in  $20^{\circ} 5' 43''$  south latitude, and  $55^{\circ} 20' 15''$  east longitude; it is sixty miles in length and forty-five in breadth. The productions are sugar, coffee, treacle, cacao, wheat, manioc, potatoes, yams, pine-woods, and



timber. The governor and principal authorities reside at St. Denis.

The Mauritius, sometimes called the Isle of France, is situated in  $20^{\circ} 9\frac{3}{4}'$  south lat., and in  $57^{\circ} 29\frac{1}{4}'$  east long. This island was taken from the French in 1810; it is about 135 miles in circumference; the climate is healthy, and the soil, though strong, is tolerably fertile. The country is so mountainous that some of the mountains are frequently covered with snow; the whole is well watered, and produces wheat, rice, maize, sugar, indigo, cotton, coffee and cloves.

What sort of harbour is afforded by this island?

*Port Louis*, the principal town, has a safe port, containing fifty large vessels; the town is strongly fortified, and contains about 6,000 houses.

What other islands are dependencies of the Mauritius?

These are numerous, the principal are Rodriguez, *St. Brandon Bank* (twelve in number), *Diego Garcia*, *Les six Isles*, *Les trois Freres*, The Onze Isles, *Los Peros Banos*, *Isle Legoun*, *A. Galega*, *Coetivi*. The *Seychelles*, already mentioned, thirty in number, and of which *Malie*, the principal, is from 75 to 76 miles in circumference. St. Pierre is an uninhabited island 750 miles north-west from Mauritius, Lastly, the islands of St. Paul and Amsterdam, about 1450 miles south-east by south from Mauritius.

## CONCLUSION.

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An examination of the shores of the two oceans that surround Australia, and of Australia itself, suggests new views of various subjects:—man's agency in the distribution of plants and animals—the creation of new centres of commercial enterprise—the effects of steam navigation. The Cape of Good Hope and Cape Horn alone admit of a passage from Europe by sea to those shores, which, in all ages, from the richness of their products, have been most attractive to commerce.

By land, the routes have been various; but although continued through distant ages to the present time, the path of Asiatic commerce has ever had the effect of enriching the cities and countries through which it led—whether through Tyre, Sidon, Baalbec, Palmyra, Alexandria, Genoa, Venice, Lisbon, or Amsterdam. And now, while the Isthmus of Suez and steam navigation admit an access direct to the Indian Ocean from the west: a high way, a mile broad! is proposed to be made direct to the shores of the Pacific, from the east, towards the same favoured regions of India and China.

The cursory view afforded in this book, of the products of the various shores, may suffice to shew why access is so much desired by the commercial nations of the earth, to this side the globe.

The position of Australia commands access to the most favoured regions within the two stormy capes, and it may be said that to this geographical position, considered in relation to more productive regions, rather than to any natural productions of her own, Australia *must owe her future importance*. For, this country has

not contributed any useful garden vegetable, nor fruit, nor grain, for man's support; nor any domestic animal, nor useful beast of burden. Before the land can be extensively cultivated, it must be artificially irrigated: neither have the medicinal qualities of indigenous plants been discovered, nor has the ingenuity of man been brought to bear on whatever capabilities may exist in the soil or its productions. Neither has the agency of man been yet employed to introduce the numerous natural productions which a beneficent Creator has set before Australians on the opposite shores of surrounding seas, although it is obvious that with the fine soil and climate of Australia, all the elements of wealth and prosperity may be brought together, to flourish there. To this great end, it behoves the Anglo-Australian youth to study well that portion of the world's geography in which he is thus more immediately interested. If he takes "the wings of the morning," and, following the sun in his course, he examines successively the various countries of South and North America, or even the cold and stormy regions of the north; he must be alike struck with the richness and variety of the vegetable and animal productions, and the ingenuity of man, in rendering them subservient to his use. India and China, the "gorgeous east" of Europe, are covered by his meridian sun, and are his nearest neighbours; while, from even the domestic manufactures of Persia, and the animal economy of Arabia, he might also learn much. But the natural productions of all the other regions and islands washed by the seas of Australia, are either available for cultivation, or accessible to commerce. It is surely, then, impossible for the Anglo-Saxon to be satisfied with the snapper and opossum of Australia, while even the Kamtschadale "enjoys the treasures of his stormy seas," the salmon and the sturgeon; as well as the rich venison, and every species of game, to be found in abundance in his native woods.

While the fur-hunters from the eastern limits of America, the eastern parts of Europe, and western parts of Asia, have all but extirpated the fur-bearing animals, and now face each other at the opposite corner of the Pacific; man

has been destined to rear in Australia an animal much more productive of the article of clothing than either the sea-otter or the bear. Already the wool of Australia can be carried round the world, and worked into a poncho by the British manufacturer, to undersell even that of the South American in his own market. Australia, still almost a blank sheet on the map, is in a position to provide for many other wants of the human race. "Where the Roman conquers he inhabits," says Seneca.\* Where the Briton inhabits he conquers—and that is a purer praise. He seizes on the wilds of nature and adds them to his empire, by planting there the industry that will fertilize the soil, and the laws that will civilize the people. His invasions are made with the pruning hook and the plough—his levies and contributions are an interchange that is to enrich—his encampments are fairs and warehouses—the corn springs along his path, the city climbs beside his resting place.

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